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Origin and Purpose of the Congress.

By Dr. William Rainey Harper, President of Chicago University.

In the absence of Dr. Nicholas Murray Butler, chairman of the administrative board of the congress, Dr. Harper, the vice-president of the board, explained at the opening meeting in Festival Hall, the purposes of the congress.

Many of us recall the fact that at the Paris exposition of 1889 the first attempt was made to do something systematic in the way of congresses. This attempt was the natural outcome of the opinion which had come to exist that so splendid an opportunity as was afforded by the coming together of leaders in every department of activity should not be suffered to pass by unimproved. What could be more natural in the stimulating and thought-provoking atmosphere of an exposition than the proposal to make provision for a consideration and discussion of some of the problems so closely related to the interests represented by the exposition?

The results achieved at the Paris exposition of 1889 were so striking as to lead those in charge of the world's Columbian exposition in Chicago, 1893, to organize what was called the world's congress auxiliary, including a series of congresses, in which, to use the language of the original decree, "The best workers in general science, philosophy, literature, art, agriculture, trade, and labor were to meet to present their experiences and results obtained in all those various lines of thought up to the present time." Seven years later, in connection with the Paris exposition of 1900, there was held another similar series of international congresses. The general idea had in this way slowly but surely gained recognition.

The authorities of the universal exposition at St. Louis, from the first, "recognized the desirability of providing for a congress which should exceed in its scope those that had before been attempted, and should stand as a monument to the enterprise of the exposition long after the buildings had disappeared, and the memory of its commercial achievements grown dim in the minds of men." In the earliest days of the preparation for this exposition Mr. Frederick J. V. Skiff, the director of the Columbian museum, my nearest neighbor in the city of Chicago, took occasion to present this idea, and particularly to emphasize the specific point that something should be undertaken which not only might add dignity and glory to the great name of the exposition, but also constitute a permanent and valuable contribution to the sum of human knowledge. After a consideration of the whole question, which extended over many months, the committee on international congresses resolved to establish an administrative board of seven members, to which should be committed the responsibility of suggesting a plan in detail for the attainment of the ends desired. This board was appointed in November, 1902, and consisted of Pres. Nicholas Butler, of Columbia university, N. Y.; Pres. R. H. Jesse, of the University of Missouri; Pres. Henry S. Pritchett, of the Massachusetts Institute of Technology; Dr. Herbert Putnum, librarian of Congress; Mr. Frederick J. V. Skiff, of the Columbian museum, Chicago; Fred G. Holles, of New York city, and the present speaker.

This board held several meetings for the study of the questions and problems involved in the great undertaking. Much valuable counsel was received and considered. The board was especially indebted, however, to Prof. Hugo Muensterberg of Harvard university, for specific material which he placed at their disposal; material which, with modification, served as the basis of the plans adopted by the boards and recommended to the members of the exposition.

Objects Stated.

At the same time the administrative board recommended the appointment of Mr. Howard J. Rogers as the director of congresses, and nominated Prof. Simon Newcomb, of the United States navy, to be president of the congress, and Prof. Hugo Muensterberg, of Harvard university, and Albion W. Small, of the University of Chicago, to be vice-presidents of the congress; the three to constitute the organizing committee of the congress. This organizing commitee was later empowered to visit foreign countries and to extend personal invitations to men distinguished in the arts and sciences to participate in the congresses. The reception accorded to these, our representatives, was most cordial. Of the 130 invitations thus extended 117 were accepted; and of the 117 learned savants who accepted the invitation 96 are here in person this afternoon to testify by their presence the interest they have felt in this great concourse of the world's leaders. I am compelled by necessity this afternoon to omit many points of interest in relation to the origin and history of the undertaking, all of which will be published in due time.

After many months of expectancy we have at last come together from all the nations of the world. But for what purpose? I do not know that to the statement already published in the program of the congress anything can be added which will really improve that statement. The purpose, as it has seemed to some of us, is threefold:

In the first place, to secure such a general survey of the various fields of learning, with all their "sub-divisions and multiplication of specialties," as will at the same time set forth their mutual relations and connections, and likewise constitute an effort toward the unification of knowledge. This idea of unity has perhaps been uppermost in the minds of all concerned with the work of organizing the congress.

In the second place, to provide a platform from which might be presented the various problems, a solution of which will be expected of the scholarship of the future. This includes a recognition of the fundamental principles and conception that underlie these mutual relations, and therefore

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serve necessarily as the basis of all such future work. Here, again, the controlling idea is that of unity and law, in other words, universal law.

In the third place, to bring together in person and spirit distinguished investigators and scholars from all the countries of the world, in order that by contact of one with another, a mutual sympathy may be promoted, and a practical co-operation may be effected among those whose lifework leads them far apart. Here, still again, unity of result is sought for.

As we now take up the work of this convention, which already gives sure promise of being notable among the conventions that have called together men of different nations, let us confidently assure ourselves that the great purpose which has thruout controlled in the different stages of its organization will be realized; that because the congress has been held, the nations of the earth will find themselves drawn more closely together; that human thought will possess a more unified organization and human life a more unified expression.

Evolution of the Scientific Investigator.*

By Professor Simon Newcomb, President of the International Congress of Arts and Sciences.

Certain tendencies characteristic of the science of our day clearly suggests the direction of thoughts most appropriate to the occasion. Among the strongest of these is one toward laying greater stress on questions of the beginning of things, and regarding a knowledge of the laws of development of any object of study as necessary to the understanding of its present form. It may be conceded that the principle here involved is as applicable in the broad field before us as in a special research into the properties of the minutest organism. It therefore seems meet that we should begin by inquiring what agency has brought about the remarkable development of science to which the world of to-day bears witness. This view is recognized in the plan of our proceedings by providing for each great department of knowledge a review of its progress during the century that has elapsed since the great event commemorated by the scenes outside this hall. But such reviews do not make up that general survey of science at large which is necessary to the development of our theme, and which must include the action of causes that had their origin long before our time. The movement which culminated in making the nineteenth century ever memorable in history is the outcome of a long series of causes, acting thru many centuries, which are worthy of especial attention on such an occasion as this. In setting them forth we should avoid laying stress on those visible manifestations which, striking the eye of every beholder, are in no danger of being overlooked, and search rather for those agencies whose activities underlie the whole visible scene, but which are liable to be blotted out of sight by the very brillancy of the results to which they had given rise. It is easy to draw attention to the wonderful qualities of the oak; but, from that very fact, it may be needful to point out that the real wonder lies concealed in the acorn from which it grew.

Our inquiry into the logical order of the causes which have made our civilization what it is to-day will be facilitated by bringing to mind certain elementary considerations—ideas so familiar that setting them forth may seem like citing a body of truisms—and yet so frequently overlooked, not only individually but in their relation to each other, that the conclusion to which they lead may be lost to sight. One of these propositions is that psychical rather than material causes are those which we should regard as fundamental in directing the development of the social organism. The human intellect is the really active agent in every branch of endeavor—the primum mobile of civilization—and all those material manifestations to which our attention is so often directed are to be regarded as secondary to this first agency. If it be true that "in the world is nothing great but man; in man is nothing great but mind," then should the key-note of our discourse be the recognition of this first and greatest of powers.

Another well-known fact is that those applications of the forces of nature to the promotion of human welfare which have made our age what it is are of such comparatively recent origin that we need go back only a single century to antedate their most important features, and scarcely more than four centuries to find their beginning. It follows that the subject of our inquiry should be the commencement, not many centuries ago, of a certain new form of intellectual activity.

Having gained this point of view, our next inquiry will be into the nature of that activity and its relation to the stages of progress which preceded and followed its beginning. The superficial observer, who sees the oak but forgets the acorn, might tell us that the special qualities which have brought out such great results are expert scientific knowledge and rare ingenuity, directed to the application of the powers of steam and electricity. From this point of view the great inventors and the great captains of industry were the first agents in bringing about the modern era. But the more careful inquirer will see that the work of these men was possible only thru a knowledge of the laws of nature, which had been gained by men whose work took precedence of theirs in logical order, and that success in invention has been measured by completeness in such knowledge. While giving all due honor to the great inventors, let us remember that the first place is that of the great investigators, whose forceful intellects opened the way to secrets previously hidden from men.

Let it be an honor and not a reproach to these men that they were not actuated by the love of gain, and did not keep utilitarian ends in view in the pursuit of their researches. If it seems that in neglecting such ends they were leaving undone the most important part of their work, let us remember that nature turns a forbidding face to those who pay her court with the hope of gain, and is responsive only to those suitors whose love for her is pure and undefiled. Not only is the special genius required in the investigator not that generally best adapted to applying the discoveries which he makes, but the result of his having sordid ends in view would be to narrow the field of his efforts, and exercise a depressing effect upon his activities. The true man of science has no such expression in his vocabulary as "useful knowledge." His domain is as wide as nature itself, and he best fulfills his mission when he leaves to others the task of applying the knowledge he gives to the world.

Functions of Investigators.

We have here the explanation of the well-known fact that the functions of the investigator of the laws of nature, and of the inventor who applies these laws to utilitarian purposes, are rarely united

*This was the principal paper of the opening session of the Congress, Sept. 19.

in the same person. If the one conspicuous exception which the past century presents to this rule is not unique, we should probably have to go back to Watt to find another.

From this standpoint it is clear that the primary agent in the movement which has elevated man to the masterful position he now occupies is the scientific investigator. He it is whose work has deprived plague and pestilence of their terrors, alleviated human suffering, girdled the earth with the electric wire, bound the continent with the iron way, and made neighbors of the most distant nations. As the first agent which has made possible this meeting of his representatives, let his evolution be this day our worthy theme. As we follow the evolution of organism by studying the stages of its growth, so we have to show how the work of the scientific investigator is related to the ineffectual efforts of his predecessors.

In our time we think of the process of development in nature as one going continuously forward thru the combination of the opposite processes of evolution and dissolution. The tendency of our thought has been in the direction of banishing cataclysms to the theological limbo, and viewing nature as a sleepless plodder, endowed with infinite patience, waiting thru long ages for results. I do not contest the truth of the principle of continuity on which this view is based. But it fails to make known to us the whole truth. The building of a ship from the time that her keel is laid until she is making her way across the ocean is a slow and gradual process; yet there is a cataclysmic epoch in her history, opening up a new era in her existence. It is the moment, when, after lying for months or years a dead, inert, immovable mass, she is suddenly endowed with the power of motion, and, as if imbued with life, glides in the stream, eager to begin the career for which she was designed.

I think it is thus in the development of humanity. Long ages may pass, during which a race, to all external observation, appears to be making no real progress. Additions may be made to learning, and the records of history may constantly grow, but there is nothing in its sphere of thought, or in the features of its life, that can be called essentially new. Yet nature may have been all along slowly working in a way which evades our scrutiny until the result of her operations suddenly appears in a new and revolutionary movement, carrying the race to a higher plane of civilization.

It is not difficult to point out such epochs in human progress. The greatest of all because it was the first, is one of which we find no record either in written or geological history. It was the epoch when our progenitors took conscious thought of the morrow, first used the crude weapons which nature had placed within their reach to kill their prey, first built a fire to warm their bodies and cook their food. I love to fancy that there was some one first man, the Adam of evolution, who did all this, and who used the power thus acquired to show his fellows how they might profit by his example. When the members of the tribe or community which he gathered around him began to conceive of life as a whole—to include yesterday, to-day, and to-morrow in the same mental grasp—to think how they might apply the gifts of nature to their own uses—a movement was begun which should ultimately lead to civilization.

Progress of Mankind.

Long, indeed, must have been the ages required for the development of this rudest primitive community into the civilization revealed to us by the most ancient tablets of Egypt and Assyria. After spoken language was developed, and after the rude representation of ideas by visible marks, drawn to resemble them, had long been practiced, some Cadmus must have invented an alphabet. When the use of written language was thus introduced, the word of command ceased to be confined to the range of the human voice, and it became possible for master minds to extend their influence as far as a written message could be carried. Then were communities gathered into provinces; provinces into kingdoms; kingdoms into the great empires of antiquity. Then arose a stage of civilization which we find pictured in the most ancient records—a stage in which men were governed by laws that were perhaps as wisely adapted to their conditions as our laws are to ours—in which the phenomena of nature were rudely observed, and striking occurrences in the earth or in the heavens recorded in the annals of the nation.

Vast was the progress of knowledge during the interval between these empires and the century in which modern science began. Yet, if I am right in making a distinction between the slow and regular steps of progress, each growing naturally out of that which preceded it, and the entrance of the mind at some fairly definite epoch into an entirely new sphere of activity, it would appear that there was only one such epoch during the entire interval. This was when abstract geometrical reasoning commenced, and astronomical observations aiming at precision were recorded, compared, and discussed. Closely associated with it must have been the construction of the forms of logic. The radical difference between the demonstration of a theorem of geometry and the reasoning of everyday life which the masses of men must have practiced from the beginning, and which few even to-day ever get beyond, is so evident at a glance that I need not dwell upon it. The principal feature of this advance is that, by one of those antinomies of the human intellect, of which examples are not wanting even in our own time, the development of abstract ideas preceded the concrete knowledge of natural phenomena.

When we reflect that in the geometry of Euclid the science of space was brought to such a logical perfection that even to-day its teachers are not agreed as to the practicability of any great improvement upon it, we can not avoid the feeling that a very slight change in the direction of the intellectual activity of the Greeks would have led to the beginning of natural science. But it would seem that the very purity and perfection which was aimed at in their system of geometry stood in the way of any extension or application of its methods and spirit to the field of nature. One example of this is worthy of attention. In modern teaching the idea of magnitude as generated by motion is freely introduced. A line is described by a moving point; a plane by a moving line; a solid by a moving plane. It may, at first sight, seem singular that this conception finds no place in the Euclidian system. But we may regard the omission as a mark of logical purity and rigor. Had the real or supposed advantages of introducing motion into geometrical conceptions been suggested to Euclid, we may suppose him to have replied that the theorems of space are independent of time; that the idea of motion necessarily implies time, and that in consequence, to avail ourselves of it would be to introduce an extraneous element into geometry.

It is quite possible that the contempt of the ancient philosophers for the practical application of their science, which has continued in some form to our own time, and which is not altogether unwholesome, was a powerful factor in the same direction. The result was that, in keeping geometry pure from ideas which did not belong to it, it failed to

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form what might otherwise have been the basis of physical science. Its founders missed the discovery that methods similar to those of geometric demonstration could be extended into other and wider fields than that of space. Thus not only the development of applied geometry, but the reduction of other conceptions to a rigorous mathematical form was indefinitely postponed.

Astronomy is necessarily a science of observation pure and simple, in which experiment can have no place except as an auxiliary. The vague accounts of striking celestial phenomena handed down by the priests and astrologers of antiquity were followed in the time of the Greeks by observations having, in form at least, a rude approach to precision, tho nothing like the degree of precision that the astronomer of to-day would reach with the naked eye, aided by such instruments as he could fashion from the tools at the command of the ancients.

The rude observations commenced by the Babylonians were continued with gradually improving instruments—first by the Greeks and then by the Arabs—but the results failed to afford any true insight into the true relation of the earth to the heavens. What was most remarkable in this failure is that, to take a first step forward which would have led on to success, no more was necessary than a course of abstract thinking vastly easier than that required for working out the problems of geometry. That space is infinite is an unexpressed axiom, tacitly assumed by Euclid and his successors. Combining this with the most elementary consideration of the properties of the triangle, it would be seen that a body of any given size could be placed at such a distance in space as to appear to us like a point. Hence a body as large as our earth, which was known to be a globe from the time that the ancient Phoenicians navigated the Mediterranean, if placed in the heavens at a sufficient distance, would look like a star. The obvious conclusion that the stars might be bodies like our globe, shining either by their own light or by that of the sun, would have been a first step to the understanding of the true system of the world.

There is historic evidence that this deduction did not wholly escape the Greek thinkers. It is true that the critical student will assign little weight to the current belief that the vague theory of Pythagoras—that fire was at the center of all things—implies a conception of the heliocentric theory of the solar system. But the testimony of Archimedes, confused tho it is in form, leaves no serious doubt that Aristarchus of Samos not only propounded the view that the earth revolves both on its own axis and around the sun, but that he correctly removed the great stumbling block in the way of this theory by adding that the distance of the fixed stars was infinitely greater than the dimensions of the earth's orbit. Even the world of philosophy was not yet ready for this conception, and, so far from seeing the reasonableness of the explanation, we find Ptolemy arguing against the rotation of the earth on grounds which careful observation of the phenomena around him would have shown to be ill founded.

Physical science, if we can apply that term to an unco-ordinated body of facts was successfully cultivated from the earliest times. Something must have been known of the properties of metal, and the art of extracting them from their ores must have been practiced from the time that coins and medals were first stamped. The properties of the most common compounds were discovered by alchemists in their vain search for the philosopher's stone, but no actual progress worthy of the name rewarded the practitioners of the black art.

Contrast.

Perhaps the first approach to a correct method was that of Archimedes, who by much thinking worked out the law of the lever, reached the conception of the center of gravity, and demonstrated the first principles of hydrostatics. It is remarkable that he did not extend his researches into the phenomena of motion, whether spontaneous or produced by force. The stationary condition of the human intellect is most strikingly illustrated by the fact that not until the time of Leonardo was any substantial advance made on his discovery. To sum up in one sentence the most characteristic feature of ancient and medieval science, we see a notable contrast between the precision of thought implied in the construction and demonstration of geometrical theorems and the vague, indefinite character of the ideas of natural phenomena generally, a contrast which did not disappear until the foundations of modern science began to be laid.

We should miss the most essential point of the difference between medieval and modern learning if we looked upon it as mainly a difference either in the precision or the amount of knowledge. The development of both of these qualities would, under any circumstances, have been slow and gradual, but sure. We can hardly suppose that any one generation, or even any one century, would have seen the complete substitution of exact for inexact ideas. Slowness of growth is as inevitable in the case of knowledge as in that of a growing organism. The most essential point of difference is one of those seemingly slight ones, the importance of which we are too apt to overlook. It was like the drop of blood in the wrong place, which some one has told us makes all the difference between a philosopher and a maniac. It was all the difference between a living tree and a dead one, between an inert mass and a growing organism. The transition of knowledge from the dead to the living form must, in any complete review of the subject, be looked upon as the really great event of modern times. Before this event the intellect was bound down by a scholasticism which regarded knowledge as a rounded whole, the parts of which were written in books and carried in the minds of learned men. The student was taught from the beginning of his work to look upon authority as the foundation of his beliefs. The older the authority the greater the weight it carried. So effective was this teaching that it seems never to have occurred to individual men that they had every opportunity ever enjoyed by Aristotle of discovering truth, with the added advantage of all his knowledge to begin with. With all the development of formal logic, that practical logic was wanting which could see that the last of a series of authorities, every one of which rested on those which preceded it, could never form a surer foundation for any doctrine than that supplied by its original propounder.

Tne result of this view of knowledge was that, altho during the fifteen centuries following the death of the geometer of Syracuse great universities were founded at which generations of professors expounded all the learning of their time, neither professor nor student ever suspected what latent possibilities of good were concealed in the most familiar operations of nature. Every one felt the wind blow, saw water boil, and heard the thunder crash, but never thought of investigating the forces here at play. Up to the middle of the fifteenth century the most acute observer could scarcely have seen the dawn of a new era.

In view of this state of things it must be regarded as one of the most remarkable facts in evo-

lutionary history that four or five men, whose mental constitution was either typical of the new order of things or who were powerful agents in bringing it about, were all born during the fifteenth century, four of them at least at so nearly the same time as to be contemporaries.

Leonardo da Vinci, whose artistic genius has charmed succeeding generations, was also the first practical engineer of his time, and the first man after Archimedes to make a substantial advance in developing the laws of motion. That the world was not prepared to make use of his scientific discoveries does not detract from the significance which must attach to the period of his birth.

History Reviewed.

Shortly after him was born the great navigator whose bold spirit was to make known a new world, thus giving to commercial enterprise that impetus which was so powerful an agent in bringing about a revolution in the thoughts of men.

The birth of Columbus was soon followed by that of Copernicus, the first after Aristarchus to demonstrate the true system of the world. In him more than in any of his contemporaries do we see the struggle between the old forms of thought and the new. It seems almost pathetic and is certainly most suggestive of the general view of knowledge taken at this time that, instead of claiming credit for bringing to light great truths before unknown, he made a labored attempt to show that after all, there was nothing really new in his system, which he claimed to date from Pythagoras and Philolaus. In this connection it is curious that he makes no mention of Aristarchus who, I think will be regarded by conservative historians as his only demonstrated predecessor. To the hold of the older ideas upon his mind we must attribute the fact that in constructing his system he took great pains to make as little change as possible in ancient conceptions.

Luther, the greatest thought-stirrer of them all, practically of the same generation with Copernicus, Leonardo, and Columbus, does not come in as a scientific investigator, but as the great loosener of chains which had so fettered the intellect of men that they dared not think otherwise than as the authorities thought.

Almost coeval with the advent of these intellects was the invention of printing with movable type. Gutenberg was born during the first decade of the century, and his associates and others credited with the invention not many years afterward. If we accept the principle on which I am basing my argument, that we should assign the first place to the birth of those psychic agencies which started men on new lines of thought, then surely was the fifteenth the wonderful century.

Process of Development.

Let us not forget that, in assigning the actors then born to their places, we are not narrating history, but studying a special phase of evolution. It matters not for us that no university invited Leonardo to its halls, and that his science was valued by his contemporaries only as an adjunct to the art of engineering. The great fact still is that he was the first of mankind to propound laws of motion. It is not for anything in Luther's doctrines that he finds a place in our scheme. No matter for us whether they were sound or not. What he did toward the evolution of the scientific investigator was to show by his example that a man might question the best-established and most venerable authority and still live—still preserve his intellectual integrity—still command a hearing from nations and their rulers. It matters not for us whether Columbus ever knew that he had discovered a new continent. His work was to teach that neither hydra, chimera, nor abyss—neither divine injunction nor infernal machination—was in the way of men visiting every part of the globe, and that the problem of conquering the world reduced itself to one of sails and rigging, hull and compass.

The better part of Copernicus was to direct man to a viewpoint whence he should see that the heavens were of like matter with the earth. All this done, the acorn was planted from which the oak of our civilization should spring. The mad quest for gold which followed the discovery of Columbus, the questionings which absorbed the attention of the learned, the indignation excited by the seeming vagaries of a Paracelsus, the fear and trembling lest the strange doctrine of Copernicus should undermine the faith of centuries, were all helps to the germination of the seed—stimuli to thought which urged it on to explore the new fields opened up to its occupation. This given, all that has since followed came out in regular order of development, and need be here considered only in those phases having a special relation to the purpose of our present meeting.

Growth Slow at First.

So slow was the growth at first that the sixteenth century may scarcely have recognized the inauguration of a new era. Torricelli and Benedetti were of the third generation after Leonardo, and Galileo, the first to make a substantial advance upon his theory, was born more than a century after him. Only two or three men appeared in a generation who, working alone, could make real progress in discovery, and even these could do little in leavening the minds of their fellow men with new ideas.

Up to the middle of the seventeenth century an agent which all experience since that time shows to be necessary to the most productive intellectual activity was wanting. This was the attraction of like minds making suggestions to each other, criticising, comparing, and reasoning. This element was introduced by the organization of the Royal Society of London and the Academy of Sciences of Paris.

The members of these two bodies seem like ingenious youth suddenly thrown into a new world of interesting objects, the purposes and relations of which they had to discover. The novelty of the situation is strikingly shown in the questions which occupied the minds of the incipient investigators. One natural result of British maritime enterprise was that the aspirations of the fellows of the Royal Society were not confined to any continent or hemisphere. Inquiries were sent all the way to Batavia to know "whether there be a hill in Sumatra which burneth continually and a fountain which runneth pure balsam." The astronomical precision with which it seemed possible that physiological operations might go on was evinced by the inquiry whether the Indians can so prepare that stupefying herb Datura, that "they make it lie several days, months, years, according as they will, in a man's body without doing him any harm, and at the end kill him without missing an hour's time." Of this continent, one of the inquiries was whether there be a tree in Mexico that yields water, wine, vinegar, milk, honey, wax, thread, and needles.

Among the problems before the Paris Academy of Sciences those of physiology and biology took a prominent place. The distillation of compounds had long been practiced, and the fact that the more spiritous elements of certain substances were thus separated naturally led to the question whether the essential essences of life might not be discov-

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erable in the same way. In order that all might participate in the experiments, they were conducted in open session of the academy, thus guarding against the danger of any one member obtaining for his exclusive personal use a possible elixir of life. A wide range of the animal and vegetable kingdom, including cats, dogs, and birds of various species were thus analyzed. The practice of dissection was introduced on a large scale. That of the cadaver of an elephant occupied several sessions, and was of such interest that the monarch himself was a spectator.

To the same epoch with the formation and first work of these two bodies belongs the invention of a mathematical method which in its importance to the advance of exact science may be classed with the invention of the alphabet in its relation to the progress of society at large. The use of algebraic symbols to represent quantities had it sorigin before the commencement of the new era, and gradually grew into a highly developed form during the first two centuries of that era. But this method could represent quantities only as fixed. It is true that the elasticity inherent in the use of such symbols permitted of their being applied to any and every quantity; yet, in any one application, the quantity was considered as fixed and definite. But most of the magnitudes of nature are in a state of continual variation; indeed, since all motion is variation, the latter is a universal characteristic of all phenomena. No serious advance could be made in the application of algebraic language to the expression of physical phenomena until it could be so extended as to express variation in quantities, as well as the quantities themselves. This extension worked out independently by Newton and Leibnitz, must be classed among the greatest epoch-making conceptions in exact science. With it the way was opened for the unimpeded and continually accelerated progress of the last two centuries.

The feature of this period which has the closest relation to the purpose of our coming together is the seemingly unending subdivision of knowledge into specialties, many of which are becoming so minute and so isolated that they seem to have no interest for any but their few pursuers. Happily science itself has afforded a corrective for its own tendency in this direction. The careful thinker will see that in these seemingly diverging branches common elements and common principles are coming more and more to light. There is an increasing recognition of methods of research and of deduction which are common to large branches or to the whole of science. We are more and more recognizing the principle that progress in knowledge implies its reduction to more exact forms, and the expression of its ideas in language, more or less mathematical. The problem before the organizers of this congress was, therefore, to bring the sciences together and seek for the unity which we believe underlies their infinite diversity.

The assembling of such a body as now fills this hall was scarcely possible in any preceding generation, and is made possible now only thru the agency of science itself. It differs from all preceding international meetings by the universality of its scope, which aims to include the whole of knowledge. It is also unique in that none but leaders have been sought out as members. It is unique in that so many lands have delegated their choicest intellects to carry on its work. They come from the country to which our republic is indebted for a third of its territory, including the ground on which we stand; from the land which has taught us that the most scholarly devotion to the languages and learning of the cloistered past is compatible with leadership in the practical application of modern science to the arts of life; from the island whose language and literature have found a new field and a vigorous growth in this region; from the last seat of the holy Roman empire; from the country which, remembering a monarch who made an astronomical observation at the Greenwich observatory, has enthroned science in one of the highest places in its government; from the peninsula so learned that we have invited one of its scholars to come and tell us of our own language; from the land which gave birth to Leonardo, Galileo, Torricelli, Columbus, Volta—what an array of immortal names!—from the little republic of glorious history which, breeding men rugged as its eternal snow peaks, has yet been the seat of scientific investigation since the day of the Bernoullis; from the land whose heroic dwellers did not hesitate to use the ocean itself to protect it against invaders, and which now makes us marvel at the amount of erudition compressed within its little area; from the nation across the Pacific, which, by half a century of unequaled progress in the arts of life, has made an important contribution to evolutionary science thru demonstrating the falsity of the theory that the most ancient races are doomed to be left in the rear of the advancing age—in a word, from every great center of intellectual activity on the globe I see before me eminent representatives of that world-advance in knowledge which we have met to celebrate. May we not confidently hope that the discussions of such an assemblage will prove pregnant of a future for science which shall outshine even its brilliant past.

Supervision of Health Regulations.

Federal supervision of health regulations was advocated by Dr. Ernst J. Lederle, former commissioner of health for New York city, in the health section of the department of medicine. Sanitary science has been, for so much of its brief existence, set forth almost wholly by medical men that it is still widely regarded as their peculiar province, he said. The very nature of his training and occupation makes the intelligent physician find in unsanitary surroundings a predisposing cause of disease. His work has been and will continue to be to improve sanitary conditions so as to minimize and finally to eradicate many diseases which make up a large part of the annual mortality.

His experience and training, Dr. Lederle continued, are rarely, if ever, of the sort to make him a successful administrator. I do not by any means seek to maintain that this function resides wholly in the so-called sanitarium; far from it. But in the adaptation of means to ends, in countless circumstances of administrative duty which public service entails, a layman with skilled medical advice upon purely medical questions, seems better fitted to accomplish results than the physician alone.

This leads me, he added, to a statement of what I believe to be the best possible organization of a sanitary service, municipal, state, or national, and one which I hope some day will be adopted not only in cities and states, but by our federal government. At its head should be a board of administration, consisting of a physician of the first rank, skilled in the application of bacteriological and general medical research to the problems of hygiene; a trained sanitary engineer, and third, if you like, as a balance wheel to prevent the eccentrics of the specialists from disturbing the workings of the machine, a man of affairs in the broader sense of the word, who should be versed in sanitary practice, and at the same time chosen mainly for administrative skill and for a certain practical common sense, which might guide such an organization wisely, and perchance, prevent misuse of the great powers with which it ought to be endowed.

Present Problems of the School.*

By Supt. William H. Maxwell, New York City.

The public schools should provide such an education that the opportunities of all citizens to make a living and to lead happy and prosperous lives shall be equal, as far as education can make them equal.

The public schools should provide the highest quality of education, not only for the purpose of equalizing the opportunities of all, but in order that there may be a "perpetual succession of superior minds, by whom knowledge is advanced, and the community urged forward in civilization." Even if comparatively few can avail themselves fully of such education, it is still invaluable to the many by supplying intelligent leadership and expert counsel. The field of human activity is so enormous that, in the more complicated affairs of life, each man, outside a necessarily limited field of experience, needs and should learn to accept the guidance of experts —the specialists in the various departments of law, medicine, surgery, sanitation, engineering, agriculture, and the like. Moreover, as Professor Marshall has pointed out, at least one-half of the best natural genius born into a country belongs to the manual labor classes. Without opportunities for the higher culture, the greater part of this "best natural genius" would be fruitless. Communities that do not provide facilities for the training of genius born in obscurity, are on the high road to decadence. These are the reasons why in all states of the Union, high schools, and in many states, colleges, and universities are maintained at the expense of the taxpayers.

The school, as distinguished from the college, provides training for childhood and youth. The period of childhood, from the point of view of the school, extends from the third or fourth year to the twelfth; and the period of youth from the thirteenth to the eighteenth.

The state should require that the primary elements and means of knowledge should be taught to all children.

The school should provide training for the body as well as for the mind, because the physical nature is the foundation of all life, including the mental; because for good or ill the condition of the body influences the mind, and the condition of the mind influences the body; because without due co-ordination between the mind and the body, no person is thoroly equipped for the battle of life; and because a race of men and women capable of enduring the labors of peace and the hardships of war is necessary to the safety of society.

The intellectual training given in the schools involves, in the first place, the adjustment of the mind to its spiritual environment thru gaining some knowledge of the intellectual inheritances of the race, and, in the second place, the development of the qualities of industry, energy, helpfulness, and devotion to duty—qualities necessary both to individual and to social progress.

These six propositions are, I think, fundamental. They give rise, however, to a host of most difficult problems in practical administration. The limit of this paper permits me to discuss briefly only a few of the most important:

One Physical Education Problem in Cities.

A most serious difficulty in the way of providing such equipment for physical education is raised by the congestion of population in our large cities, caused partly by constantly increasing immigration and partly by the continuous movement of population from rural to urban life. The result is a deplorable lack of space in which children may play. This condition exists in nearly all our large cities and particularly in New York, where the huge tenement, crowded to suffocation, full of nerve racking noises, abominable stenches, and woeful sights, is the home, if home it may be called, of hundreds of thousands of children. With no place to play but the streets, boys, so deep seated is the instinct for play, form organizations of their own for street games. The organization is the gang, and the games are gambling, destroying, stealing, fighting, and sometimes even stabbing or shooting. With no comfort or privacy in the rooms they call home, girls show a constant tendency to degenerate both physically and morally. Moreover, the poorer classes are in these days invariably the most prolific. If, as Prime Minister Balfour recently pointed out, the chief burden of perpetuating the race falls upon the poor in urban communities, then it is essential to the well-being of society that the school should labor incessantly for their physical improvement.

The physical education problem of the school is, therefore, twofold—to secure equipment for gymnastics and manual training in school buildings and to provide space for athletics and free play in which the child's individuality may have scope to develop amid pleasant and healthful surroundings.

A partial solution of the problem is to open the school buildings and yards in the afternoon and evening thruout the school year and during the summer vacation for purposes of manual training, gymnastics, athletics, and free play. The New York educational authorities are using the school buildings in this way.

Nothing short of a revolution in the existing tenement house system will restore the life of the poor in the city of New York to something like normal conditions. And how is this to be accomplished? I answer unhesitatingly that the tenement house, as it has been known in New York city, must be eradicated. University and other social settlements are doing good, small parks afford some relief, and the public schools are doing a good deal and may do much more, but none of these instrumentalities goes to the root of the matter.

The school should and must at all waking hours do all that its resources permit to supply what the home, even under the most favorable conditions, loses by moving from agricultural to urban life, but if the home and its wholesome influences are not to be obliterated among the city poor the city, must see to it that the so-called working classes are enabled to live in homes where homely virtues have a chance to flourish and where children have space to play.

Division of Time Between High Schools and Elementary Schools.

Another of the very serious problems of school administration confronting us at present, is the division of time as between the elementary school and the high school. The customary division assigns two years, from the age of four to six to the kindergarten; eight years, from six to fourteen to the elementary school; and four years, from fourteen to eighteen to the high or secondary school. If it is true, as is now generally believed, that the period of childhood closes at twelve, that the period of youth begins at thirteen, and that the child and the youth need different subject-matter and differ-

*Dr. Maxwell read this paper Sept. 20 before the "school" section of the department of education.

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ent methods of teaching, it is obvious that a distribution of time which requires two years of the period of youth to be spent under school conditions fit only for the child, is open to most serious objections. Specifically stated these objections are as follows:

First, the present arrangement causes the loss of valuable time by prolonging for two years a method of teaching that is fitted only for children; second, it unduly defers and therefore unjustly abbreviates the time devoted to foreign languages, to the higher mathematics, and to science; and third, in cities where school accommodations are limited in proportion to the number of children, it is wasteful because while the class-rooms occupied by grades of the first six years are crowded, those devoted to the seventh and eighth years are often practically empty.

In order to obviate the waste of effort, of time, and of space involved in the present organization of schools, I suggest the following arrangement:

1. School life, above the kindergarten age, should be divided into two equal periods—the elementary, corresponding to the epoch of childhood, and the secondary, corresponding to the epoch of youth. Each period would provide for six years of school work—the elementary from six to twelve, the secondary, from thirteen to eighteen.

2. For economic reasons, inasmuch as children leave school rapidly after they are of age to go to work, the secondary schools should be of two kinds, which might be called the pre-academic and the academic. The pre-academic schools would provide three years of work, from thirteen to fifteen, and would be established at convenient points selected with a view to accommodate the children promoted from the elementary schools. The academic schools which would be comparatively few in number and established only in crowded centers, would provide another three years of work for youths from sixteen to eighteen. In this way space would be economized, much more work would be accomplished, and, it may be reasonably anticipated that our young men and young women, before leaving the high school or academy would have covered most, if not all, of the work that is now accomplished by the end of the sophomore year in the average college.

The Elementary Curriculum.

After the problem of the distribution of time comes the problem of the elementary curriculum. What studies shall be pursued by children between the ages of six and thirteen? The answer to this question is found in the fundamental assumption that mental education is the gradual adjustment of the child to his spiritual environment.

President Butler was probably the first to advance this view of education as a development of Mr. John Fiske's discovery that the prolonged period of infancy in the human race lies at the foundation of family life. President Butler defines our spiritual environment as "the spiritual possessions or inheritances of the race." These spiritual inheritances he classifies as our scientific inheritance, our literary inheritance, our artistic inheritance, our institutional inheritance and our religious inheritance. As education is the work of the school, it is obviously, then, its function to introduce the child to his spiritual inheritance. As a recent writer has well expressed the thought: "This production from within the mind of its own world in response to the stimulating effects of the world without is education as a process, as an activity. What his race has produced, he (the youth) reproduces, and thus universalizes his individual nature and socializes his private impulses."

Twenty-five years ago the average elementary school in America taught reading, writing, spelling, grammar, geography, United States history, and what was called civics. In order to fill in the time, arithmetical rules of no possible use in life were taught, and the children's wits were exercised or blunted by outlandish mathematical puzzles; a manual of United States history and the Constitution of the United States were learned by heart; long lists of meaningless names were memorized in geography; parsing, with the utmost detail, was continuous; drawing, where drawing was taught, was exclusively from flat copies, and the crowning glory of the school was held to be the ability to spell sesquipedalian words whose signification had never dawned upon the childish intellect.

A beginning of this plan has been made in several cities by the enrichment of the last two years of the elementary course of study, thru the the introduction of a foreign language, algebra and elementary physics. The gradually extending use of the departmental system of teaching, by which one teacher, instead of teaching all subjects for a year or half a year, teaches one subject thru two years, is also contributing to the same result. Teachers who teach subjects for which they have special talent and preparation, and in which they are interested, to pupils thirteen and fourteen years of age, are almost certain to adopt methods suitable to the period of youth rather than to the period of childhood.

The lack of intelligence in this work is to be accounted for by two facts: first, that teachers were not as well educated or trained as they are to-day, and, second, that in the absence of interesting subject matter they required their pupils to commit to memory dry and useless details in order to fill up the prescribed time. The additions that have been gradually made are nature study, which is intended to train what President Eliot calls the "capacities for productiveness and enjoyment" thru the progressive acquisition of an elementary knowledge of the outside world; algebra, chiefly as an aid, thru the equation, to the solution of arithmetical problems; inventional geometry; literature, studied as such, distinct from the ordinary reading lesson; language and composition, as the art of expression; drawing from objects, and manual training and other physical exercises. This seems a long list of subjects, and yet every subject is justified and required by the fundamental assumption that the school exists for the progressive adaptation of the child's mind to its spiritual environment.

Room for New Subjects.

How, then, has room been made, or may room be made, for the new subject matter and the new activities? In the first place, thru the correlation of studies, the re-enforcing of one study thru other studies, as the correlation of history with geography, and of composition with literature. In the second place, thru improved methods of teaching, so that more work is accomplished in a given time. The early introduction of the idea of ratio in arithmetic and the use of the phonetic method in teaching reading are cases in point. It is safe to say that when reading is scientifically taught the average child reads better at the end of the first year in school than twenty-five years ago he could read at the end of the third year and that he actually reads five times as much matter during the first three school years as he read during the same period a quarter of a century ago. In the third place, time may be saved by lopping off useless and wearisome detail in all subjects. To a considerable extent this pruning process has been applied in the best schools.

The elective system, which has obtained so firm a footing in American colleges and universities, has spread to the secondary schools, while there are not wanting those who argue in favor of introducing it into the elementary schools. Some would go so far as to say that a youth of fourteen should be permitted while in high school to pursue as many studies, for as long a time or for as short a time, as he pleases. Tho there are few who take this extreme view, yet the elective principle has found a firm lodgment in the secondary school. For the most part it takes the form of a choice between a college preparatory course, a commercial course, and a manual training course, or a choice between two or more related subjects of study. If we assume, as I think we must, that the principle of election has been firmly established in the secondary schools, the problem which at once arises is: How shall the student be guided to a wise choice of courses and of subjects?

Obviously, when he enters, the teachers of the secondary schools cannot advise him, because when he presents himself at their doors they know nothing of his special aptitudes and little of his previous studies. In the great majority of cases parents are quite as incompetent as his new teachers to give him useful counsel. How is the boy, at the age of fourteen, to determine whether he shall take the college preparatory course or the commercial course or the manual training course? Here is a problem of the first importance. It is of the first importance to the boy himself, because his future happiness and success in life depend in in no small measure on the prudence with which he makes his selection. It is of the first importance to society, because there is no economic waste comparable in its proportions to that occasioned by setting people to work for which they have no natural aptitude. How, then, is the problem to be solved? I fear we must lay the burden in the first instance on the elementary school—a burden which that institution has hitherto made but little effort to assume.

Attention has recently been attracted by the report of the Mosely Commission to what has been called the feminization of American schools, because the great majority of public school teachers are women. It was an economic reason, in the first instance—the fact that women work for smaller wages than men—that led to the present preponderance of the feminine element in the teaching force. It is more than doubtful, however, whether American schools and American education have deteriorated in consequence. It is quite certain that the refined woman of to-day who has been thoroly trained, is a much better teacher than the coarse, ignorant, pedantic schoolmaster of fifty years ago, who excited no feeling but contempt, hatred, or terror in the breasts of his pupils. We all believe in the salutary influence of the masculine mind in teaching, particularly in the case of older pupils, but we also believe that the influence of a strong woman is better than that of a weak man; and that a woman teacher of ability who is devoting her life to educational work is apt to be a better teacher than the male fledging who takes up teaching as a makeshift and whose mind is set, not upon education as a career, but upon law or medicine. In short, to increase the efficiency of the public school teaching force by increasing the number of efficient men teachers—men who would devote their lives to the work—would involve a largely increased expenditure of money, in order to induce such men to make teaching their life work. And this brings me to my last problem, the problem of finance.

If we are to have school-houses properly equipped for the training of the body, as well as the mind, for manual training, play, gymnastics, and athletics; if all children are to enjoy their God-given right to education; if schools are to be equipped for scientific as well as literary studies; if salaries are to be paid to teachers that will attract men and women of breeding and refinement to the teaching profession, and if all the teachers are to be thoroly trained so that they will be models to imitate and persons capable of arousing interest and inspiring effort; if all these things are to be accomplished, it is evident that the sums devoted to education in America, enormous as they are, must be very greatly increased. For effective purposes, the revenue of a public school system ought to possess two characteristics: First, it should be ample, and second, it should be stable. It should be sufficiently ample in each community to provide schooling for all children in classes not to exceed forty to a teacher, and in adequately equipped buildings; to pay teachers reasonable salaries so that they may be able to live in refined surroundings and take advantage of opportunities for self-improvement; and to provide pensions after retirement so that while in active service they may be relieved of anxiety regarding provision for old age. It should be stable so that the educational authorities may be able to carry out a consistent and progressive policy. It should not be subject to the whims and caprices of the politicians who control the municipal administration of our large cities. It should not be fluctuating from year to year and thus lead to the establishment of activities one year which must be abandoned for lack of funds the next. The most efficient plan so far devised to avoid these dangers and to secure stability and liberality in the support of public schools, is the fixing by legislative authority of a school tax rate that increases with the increase in the value of property and with the growth of population. If the schools are to meet the demands which society makes upon them, a sufficient school tax must be fixed by law and the proceeds of this tax must be held sacred to the causes of education.

I have selected from among the innumerable problems in school administration which now confront the people of the United States, those that seem most important and most urgent, and I have ventured in each case to suggest a solution. Every solution proposed involves an increased expenditure of money. Immeasurably more effective, however, than money—vital tho money is—to uplift the school, are the love and skill of the devoted teacher. Love for children and teaching skill are the greatest things in the school.

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The Educational Exhibit. VIII.

The exhibit shows very clearly how little heed is given to really trustworthy pedagogic judgment in matters concerning the enrichment of school programs. Passing fads are quite as likely to supersede expert advice as are mossgrown traditions. Some schools straddle the situation by adopting tradition as the guide in the three R's, and at the same time setting aside a portion of their time for the worship of whatever fad or fads have captured the popular fancy. The result is a most curious combination of plowing with a stick and chasing the rainbow. Or, it is as if in trying to build a home one should begin with a jail as the house proper, with a number of Japan-lacquered lean-tos all around in which to entertain visitors. It is this which makes several of the exhibits look so amateurish. Thoro grounding in the history, science, and art of education is greatly needed. Superintendents and principals must be students themselves and insist upon the professional improvement of their assistant teachers. Where this is the case the exhibits reveal the fad. The hand of the expert has an unmistakable mark.

Mr. D. W. Parker, who presided over the exhibit from Wisconsin, says he is proudest of a case of manual work, sent by the Wisconsin school for the feeble minded. Seven years ago there were scattered about the state in the various asylums and poorhouses miserable, hopeless creatures, a burden to those who had them in charge, without interests of any kind. The school where they have been gathered has transformed them, as the exhibit made evident. Embroidered cushions and other kinds of fancy work were placed beside articles of wearing apparel made nicely and in good taste. Tho brains may be slow to act the fingers have been taught to do skilful work. The helpless dependents have become useful citizens. Wisconsin may well be proud of what she has done for her feeble-minded children.

There was another exhibit from Wisconsin in which THE SCHOOL JOURNAL takes particular pride. It is Lottie Sullivan, the deaf mute. It was an article in these pages showing what had been done for a girl similarly afflicted, that encouraged a Wisconsin educator to suggest to the parents of Lottie the possibility of developing her latent talents. The result was that the experiment was undertaken and Lottie brought from a state of crass ignorance to her present condition. She may be seen in the education building for a couple of hours every day. She writes on the typewriter easily and well. She communicates with her teacher by means of the finger alphabet, and she understands what anyone says to her by touching the speaker's lips. With Lottie Sullivan sits her teacher, who thru her skill and untiring perseverance has, by a very few years of labor, brought about this remarkable result. Lottie is an attractive young woman of apparently very sweet temper.

People are more or less interested in what their neighbors are doing, but their own school, their own town, their own country, their own alma mater, and their own state, are naturally of chief concern to them. Nor were the sages in attendance at the international congress of arts and sciences any exception to the rule. Whatever exhibits might attract them at first, they were sure to gravitate sooner or later to the section occupied by the states from which they hailed. David Starr Jordan and Benjamin Ide Wheeler both visited the California rooms the same morning. Among the exhibits is a case of sea-weeds, classified and beautifully mounted. President Jordan said he felt sure that this must be one of the most complete if not the finest collection of the kind in the whole country. And he ought to know, for he is our best authority on the sea and its wonders.

The sea-weeds remi ded Mr. Robert Furlong, who has charge of the California section, to call attention to the collection of shells sent by the children of Bay county. Three drawers were filled with the beautiful shells from the Pacific coast, gathered and proudly contributed by the pupils of a single district school, whose teacher was evidently wise enough to take advantage of the opportunities close at hand, for nature study and for making the most of the collecting instinct of children.

Hon. Andrew D. White, former ambassador to Germany, has, in a recent interview, severely criticised the present Dutch government for its neglect in failing to grant a site for the permanent headquarters of The Hague Tribunal of Arbitration. It will be recalled that Mr. Carnegie gave a million dollars for the erection of this temple of peace.

Mr. White fears that "some occult influence, hostile to the fundamental idea of arbitration, is at work to prevent the establishment of a tribunal to make arbitration a reality." Mr. White, in his long and singularly varied diplomatic career, has never been addicted to sensational public remarks. His words therefore deserve attention.

Bequests to Local Schools.

The will of Mr. Cornelius S. Stryker, of Gravesend, Long Island, was filed on September 27 in the office of the surrogate of Kings county. A clause in the will gives ten thousand dollars to the board of education of New York city for the erection of a high school at Gravesend, and another clause bequeaths an additional ten thousand for the establishment of a free library in the said school.

Mr. Stryker was a farmer in Gravesend, where his family, of ancient Dutch descent, had resided continuously for more than two hundred years.

This testator's munificence is another sign of a most encouraging tendency. Universities are good, very good, but there are at present plenty of them in America. The multiplication of feeble, struggling institutions of the higher learning is an evil, not a benefit. The splendid Jacob Tome Institute for Boys, with its three million dollars endowment, ought to contribute magnificent results to education in the United states. If Mr. Tome had instead founded a university on the banks of the Chesapeake, it would have been simply one more occupant in a field already sufficiently well filled.

Mr. Stryker's bequest raises the hope that public-spirited citizens will consider more frequently the needs of the elementary and secondary schools of their neighborhood. Adornments and improvements for which the taxpayer could hardly be asked, would thus be provided for the coming generation. King Edward the Sixth, boy tho he was, has a memory green after the passage of nearly four centuries, thru his famous schools; a memory as fresh as that of any of the famous statesmen and prelates who have showered Oxford and Cambridge with their benefactions.

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The Great Education Congress.

The International Congress of Arts and Science held on the grounds of the Louisiana Purchase Exposition Sept. 19-25, was, by common consent, the most important educational gathering of the kind ever held. Of 146 invitations sent to university professors and learned men in other countries than our own 117 were accepted, and ninety-six of those invited were present at the opening session of the congress. The important colleges and universities of America were all represented on the program, and some of the wisest of our learned men outside the immediate field of education were also among the speakers. It was a pity that the time of meeting confined the audiences almost entirely to the leaders in the college world, but September was the month best suited to the majority of those who came to us from abroad. Superintendents of schools, high and elementary school principals and teachers, and most of the instructors in colleges and secondary schools were conspicuously absent. The duties attendant upon the first weeks of the school year held them at their desks and classrooms.

The audience that gathered in Festival Hall for the opening session of the congress was a splendid one. The 500 seats at the front of the hall were occupied by the wearers of the red and blue congressional badges. Others were admitted by ticket. The great hall was decorated with national and Louisiana Purchase flags, the latter with a circle of fourteen white stars surrounding a fleur-de-lis on a blue ground, and three broad stripes, one each of red, white, and yellow.

Two selections on the great organ, the largest in the world, enabled the occupants of the platform, nearly a hundred in number, to take their places, and at the same time gave opportunity for those in the seats below to identify the familiar faces. Dr. Harper, Professor Muensterberg, President Hadley, Bishop Spalding, Professor Small, and Dr. Howard Rogers were among those readily recognized. But there were others, with some of whom we were made acquainted before the close of the afternoon, others whose voices were first heard in section meetings held on following days.

It was an inspiring occasion. There could hardly have been a person in Festival Hall at that opening session who was not convinced more deeply than before of the dignity as well as the importance of education and all that it stands for. Frederick J. Skiff, director of exhibits for the Exposition, stated in his speech of welcome to the congress that the purpose of the entire exposition was educational. Professor Newcomb, president of the congress, in his, the principal address of the afternoon (given elsewhere in this number of THE SCHOOL JOURNAL), emphasized the importance of education in the development of the scientific investigator.

The plans of the congress, according to Mr. Skiff, matured in the minds of the best scholars; the classification of its purpose, the scope, the selection of its participants, gave to the hopes and ambitions of the management of the exposition inspiration of the most exalted degree. The congress reflects one idea vastly outstripping others, and that is in the unity of thought, in the universal concert of purpose. It was the first time that there has been an international gathering of all the sciences, and in that respect the congress established "the universal brotherhood of scholars."

The first of the greetings from foreign countries was reserved for James Bryce, M. P., honorary vice-president for England, but as he had not arrived Sir William Ramsay brought greetings from the mother country in his stead. Sir William is recognized as the highest authority on inorganic chemistry in the world; so naturally, as he rose to his feet, he was greeted with a burst of applause. His opening words were particularly apt. "We of England," he said, "do not consider you foreigners here in America, and we feel that you look with a daughter's appreciation to the mother country."

For France, M. Gaston Darboux, the famous mathematician of the University of France, speaking in native tongue, brought greetings from the French Academy of Sciences. For Germany, Wilhelm Waldeyer, professor of anatomy in the University of Berlin, expressed, in German, his delight at the magnificence of the exposition. Prof. Theodore Escherich, of the University of Vienna, spoke for Austria. Dr. Oskar Bachlund, the great astronomer of Russia, brought greetings from his country, which he gave in English. Attilio Brunialti, the recognized leader of the legal profession of Rome, waxed eloquent as he expatiated on the progress of America, and the lessons it is teaching the Old World in science and art.

All in all it was good to be there. As the 2500 or more people congregated in Festival Hall scattered at the close of the afternoon, it was with a strong desire to make the most of the opportunity to be afforded in the following days, of coming into closer acquaintance with the speakers, in the section meetings.

The Section Meetings.

The real work of the congress began with the section meetings, the earliest of which opened at ten o'clock in the morning. The speakers in the various departments were: History—Pres. Woodrow Wilson, of Princeton; Education—Pres. Arthur T. Hadley, of Yale; Normative Science—Prof. Josiah Royce, of Harvard; Philosophy—Profs. Borden P. Bowne, of Boston university, George T. Ladd, of Yale, and George H. Howison, of the University of California; Mathematics—Profs. Maxime Bôcher, of Harvard, and James P. Pierpont, of Yale.

In the absence of Dr. Andrew D. White, Prof. Heinrich Masche presided over the department of historical science, the speakers being Profs. William M. Sloane and James H. Robinson, both of Columbia. In all, some thirty section meetings were held during the day, most of them being well attended. The unfortunate feature was, that with so bounteous a feast it was difficult to decide what to hear and what to allow to go by. The report of the congress, to be published in coming months, and which will contain all the papers read, will be enjoyed fully as much by those who spent the third week in September at St. Louis, as by those whose school duties prevented their attendance.

Opposition to Darwinian Theory.

The paper read by Prof. Hugo de Vries, of the University of Amsterdam, September 21, caused a sensation. Professor de Vries combatted Darwin's theory of the origin of species, advancing a theory of his own, in diametrical opposition to all ideas of present biologists. His address, which gave for the first time to the scientific world the results of a lifetime of research, aroused immediate interest, and considerable opposition. In the view of the speaker natural selection is only a seine and is no direct force of nature as has so often been asserted. Artificial selection consists of two main principles, called variety-testing and racial improvement. Species as we see them in nature, fluctuate within fixed limits, which are not seen to

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be transgressed. It is impossible by artificial selection to transcend these limits. But the so-called improved races are not permanent. The importance of the struggle for existence between individuals has been greatly exaggerated.

In plain terms, he says no two of the same species of animal, from the lowest stages to man, are alike in any important particular. Thru heredity he claims that the distinguishing feature or element of an individual is not transmitted to the offspring of that individual, which in the theory of Darwin represents the main principle, and who claims that by heredity passing from generation to generation, the idiosyncrasies of the primogenitor finally result in a new species. De Vries denies this and offers proof that an entirely new species may be developed within one or two generations. Prof. C. O. Whitman, of the University of Chicago, made instant objection. He poured out effective arguments with the purpose of disparaging the De Vries theory. Dr. David Starr Jordan, and other scientists from all over the world, took part in the debate which followed.

For those who could understand what was said, the section of astronomy presented interesting features. The windows of the hall were closely curtained, the only spot of light in the room being the circle thrown on the screen by a stereopticon. Dr. Oscar Bachlund, the Russian, discussed in German the "Development of Celestial Mechanics in the Nineteenth Century." He was followed by Prof. John C. Kapteyn, of the University of Gronigen, Holland, who discussed in Dutch "The Problems and Relations of Stellar Statistics."

An interesting discussion of the methods and systems of taxation was held at the meeting of the section of public finance. A paper was read by Prof. Edwin R. A. Seligman of Columbia university, who presented the subject through a review of the development of taxation. Among the conditions discussed was the tendency of the science of finance to deviate from actual practices of legislative bodies. It was the opinion of the speakers that the science of finance was recognizing the fact that public tendencies, whether according to economic standards or not, were worthy of consideration. "To a great extent," said Professor Seligman, "what is, is right, and we must recognize the utility of many movements opposed to our previous theories."

An address of September 22, by Count Apponyi, the eminent Hungarian patriot, aroused considerable interest. The Count has been traveling with the Interparliamentary congress, and left that body at Cleveland for St. Louis to address the Congress of Arts and Science. His address was a most interesting résumé of the constitution of Hungary, and a defense of the assertion that Hungary is the oldest nation with a democratic form of government. He began by tracing the evolution of the Hungarian government from the ninth century to the present time and presented proofs that the constitution which is now in force in that country is essentially the same as was formulated 1,000 years ago. That constitution springs from the nation, and there is a dividing balance between the representatives of the nation and the king.

Dr. A. S. Woodward of the British Museum of Natural History in London discussed the changes in the distribution of land areas in his lecture in the section of paleontology. He stated that according to the fossil evidence in the tertiary period there was no land communication between North and South America and there was strong evidence in support of the theory that there was an Antarctic continent which was split up, forming the many islands of the South Pacific, and evidence also in support of the theory that there was formerly a land connection between South America and Australia.

In the section of Classical Art Prof. Frank B. Tarbell of the University of Chicago lectured on the present problems in the history of classic art, dealing particularly with the problems which are suggested in trying to assign "finds" in sculpture to their proper place and time. Professor Tarbell dealt at length with the problems suggested by the acceptance of a copy as a true representation of the original. According to the lecturer this is one of the most exciting tasks which rewards the student of classic art, for each new find is liable to upset all the former theories. Copies of bronze and other metal pieces of sculpture, said Professor Tarbell, are very apt to resemble closely the original, owing to the old practice of taking a plaster cast of the original which was used in the production of the copy.

A prominent feature of the physiological chemistry section was the reading of observations made at Harvard last year on ten students, whose diet, exercise, study, and habits were closely studied, by physicians, the students co-operating. Daily record of the amount and chemical composition of foods eaten was made and physical examination of the students made at the beginning and end of the college year. The lowest daily expenditure of any man for food was 20 cents, the highest 60 cents. The men lived as ordinarily, and at the end no appreciable change was noted in their physical condition. Belief in he theory was advanced, tho not asserted, that as scientific training and muscular exercise to a certain extent increased the capacity for work, training of the appetite and diet regulation would do likewise.

But it is useless to attempt anything like a résumé of the work of the Congress. Dr. J. Howard Rogers said that papers read were coming to the secretary's desk at the rate of forty or fifty a day. There were just four women honored by being asked to take active part in the congress. They were Mrs. C. Ladd Franklin of Baltimore, who addressed the congress on "Logic;" Miss Alice C. Fletcher, president of the Washington Anthropological society, who served as chairman of the ethnology department; Prof. Mary W. Calkins of Wellesley college, one of the speakers on "Comparative and Genetic Psychology;" and Miss Jane Addams, of Hull House, Chicago, who spoke on "Municipal Administration."

Among the social features of the congress was a reception to the delegates given by Dr. Lewald, the imperial German commissioner at the exposition. It was held in the German national pavilion, and among the 1,200 guests present were 600 representatives of foreign countries. One of the functions was a banquet given in honor of the members of the chemical society by the St. Louis chemical society. A reception was given to President Hadley, of Yale, in the Connecticut building. Dr. Robert Luedeking presided at a luncheon in honor of the medical fraternity. A banquet given to the members of the congress on the evening of September 23, was held in the banquet hall of the Tyrolean Alps.

In the yearly report of the Central Council of Chicago, it is stated that the council passed the following resolutions: That a minimum of work be officially required for each grade and that ample time be left for enrichment; that there should be a return to corporal punishmnent in the schools, coupled with strict limitations; and that the council cordially approved the endeavor to make the schools of Chicago centers for the intellectual and civic life of the entire community.

Thoughts from Some of the Papers.

The Future City.

Before the urban community section a most interesting paper on the city of the future was read by Prof. Louis Wuarin of the University of Geneva, Switzerland. The speaker said of the skyscrapers that they are often a manifest nuisance, and that they should only be permitted on the condition that they are erected on a street or open space proportionate to their height. "They do not," he declared, "exist by a natural law, but are, like many other evils, the bitter fruit of anarchy. It is well known," he asserted, "that speculators have often made an effort to prevent the building center from extending, because their property would not have retained its prodigious value, and they built the modern Babel tower."

Prof. Wuarin declared that the city of the future is not to be found complete in any part of the world, but only here or there, in some of its essential elements, and above all, in the minds of reflective men. The speaker divided his subject into two chapters, the moral and the material reform in cities. On the first point, which he only touched "to mark its place and proclaim its vital importance," he insisted that it was the duty of citizens to endeavor to solve the economic antagonism in a spirit of justice and liberty, and not to be satisfied with spasmodic fits of indignation against bad administration.

On the second point, the material reforms, the speaker made special reference to the laying out of new streets, the rectification of old quarters, the building of houses with all the details relating to sanitation, public safety, and beauty.

Geology and the Farmer.

President Van Hise, of the University of Wisconsin, called attention, in a paper on "Geology," to the time and labor expended by geologists to simplify the science in order to make it appeal more strongly to the farming communities. By this means the farmers are enabled to gain better knowledge of the changes wrought by liquids, solids, and organisms on the subsoils which gradually find their way thru the upper soils, working certain changes in the actual condition of the soil, and the beneficial or detrimental effects of these substances upon fertility.

Club Life Versus the Home.

Modern club life was assailed, by Prof. George H. Howard of Leland Stanford university, before the section of Social Science, as a menace to the society of the present home.

The point under discussion was "The Family," and in his remarks Professor Howard said that at the present time the home is used merely as a place to eat and sleep, while the members of the family, thru selfishness, are made mere wage earners. Professor Howard further stated that the marriage ties are too lightly bound and as easily broken, and by reason of this fact was due the club life of today.

"During the last few years," said Prof. Howard, "the state has gained more social power in the home than ever before and is still advancing along these lines, and the social economics and home are becoming more closely interwoven."

Independence and Marriage.

The growing independence of women, according to views promulgated by Prof. Graham Taylor of the Chicago theological seminary before the department of social science, may benefit the institution of marriage, as formerly so many women married for a home. Professor Taylor referred to some of the serious disadvantages of the family in the sacrifice of children and the dependence of husbands on this independence of women. The modern tramp was declared to be a distinct product of modern civilization. He runs parallel with the railroad. The bettering of the people was brought about by municipal plans such as good lodging houses, work for the unemployed, compulsory education, and other philanthropic developments which are as much a part of the economic plan as the clearing house.

Tenacity of the Slav.

In his address on the Slavic languages, Prof. Paul Boyer, of the *Ecole des Langues Vivantes Orientales* in Paris, called attention to the remarkable tenacity of the Slavic language. He showed that the mother tongue had followed the advance of the Russian flag, as well as the colors of other countries related to the Slavic, and had not been eradicated by time. The tenacity of the language Professor Boyer believes to be due to the determined character of the people, and the continued existence of the language in its unchanged form accounts also for the preservation of the nationality of the Slavs when away from their native country.

Pearl Farms in Japan.

"The cultivation of marine and fresh water animals in Japan" was the subject of a paper read by Prof. K. Mitsukuri of the University of Tokio, before the section of oceanography. The speaker said that while the pasturage of cattle and the cultivation of plants marked very early stages in man's advancement toward civilization, the raising of aquatic animals and plants seems to belong to much later stages of human development. Cultivation of some marine animals has been rendered possible only by utilizing most recent discoveries and methods of science. But the time is fast approaching when the increase of population on the earth and the question of food supply, which must arise as a consequence, will compel us to pay most serious attention to the utilization for this purpose of what has been termed the "watery waste."

For man to overfish and then to wait for the bounty of nature to replenish, or, failing that, to seek new fishing grounds, is an act to be put in the same category with the doings of nomadic peoples wandering from place to place in search of pasturage. America has foreseen this and is ahead of other nations with her efficient fish commission. Nor is it from the utilitarian point only that more attention is likely to be paid in future to the cultivation of aquatic organisms. We have been apt to forget that animals are living entities and not simply a collection of dead tissues. But we are beginning to realize that animals must be studied living in order to arrive at the correct interpretation of many biological phenomena.

The speaker described the methods of cultivation of various marine and fresh-water organisms practiced in Japan. He first described the successful cultivation of the snapping turtle, which takes, in Japan, the place occupied by the terrapin in American gastronomy. Turtle farms in Tokyo and elsewhere are now able to raise tens of thousands

of these luscious reptiles and to keep the supply constant. Methods and plans of turtle farms were described. The speaker next described the cultivation of the goldfish which are wonderful, not only for their beauty, but are a source of endless surprises to the scientist. Various breeds were described and their extraordinary peculiarities.

In 1890 the speaker suggested to a Mr. Mikimoto the desirability of cultivating the pearl-oyster and pointed out the possibility of making the pearl-oyster produce pearls by giving artificial stimuli. The idea was taken up with enthusiasm, and the results are beyond expectations. To-day the pearl-oyster farm, put on a commercial basis, has millions of pearl-oysters living on the culture grounds and is able to place annually a large crop of what has been termed "culture pearls" on the market.

Educational Ideas in the Nineteenth Century.

BY RT. REV. JOHN SPALDING, Bishop of Peoria.

Abstract of address before the section devoted to education.

The history of the development of a people or age is the history of its education. During the last century mankind grew more than in the whole past. In our hands a key has been placed that from the beginning shut man out from the treasure house. Sense of the need of education came with the knowledge that the world would be governed more and more by the popular will. The pagan ideal was aristocratic. It considered but a class and not humanity. Christ was the first humanitarian. All men should have access, he taught, to the rights of liberty. The past still keeps us company. We do not owe to the nineteenth century the alphabet, printing, gunpowder, the discovery of America, or the steam engine. It could not have flourished at all if its roots were not stuck deep in the past. It was an era in which mankind came to fuller self-consciousness. Men became aware of the applicability of the forces which they had discovered. It was an epoch in which the human mind was stirred to greater activity. What had been achieved was but the victory of mind over matter.

They are mockers who talk of a brotherhood of men and leave some of them ignorant. Work is a blessing, but to be condemned to work ignorantly and stupidly is degradation. All genuine popular movements are inspired by sympathy. Where the masses are allowed to remain ignorant tyranny is inevitable. Public opinion turned toward the establishment of free schools. The teacher's profession has evolved into a learned profession. He is no longer a pedagog. Men have come to know that the teacher is the school. He who for ages had been a slave came to be the honored among men. The first requsite is to be a fair, brave man or woman. Since the end of education is the acquirement of wisdom, much depends on the teacher. Education is a universal right. The greatest minds of the nineteenth century gave their best thought to education. Obedience is a virtue only when it is enlightened and free. Faith in education gave the same rights to women and men. In nothing is the present age more superior to all others than in the education of its women. Germans were leaders in developing educational ideas, but the Americans were first to perceive that there can not be a free and fair-minded people when the women are not free and fair-minded. In the family the father is the head, the mother the heart. Right education is a sovereign thing. Its greatest power shall be shown in giving women a better outlook

The Busy World.

Enormous Investment in Insurance.

The three greatest *mutual* companies have become the most powerful financial organizations in the world, having a joint income of some $250,000,000 a year, writes Henry Wysham Lanier, in the October *World's Work*. The "straight" life insurance companies of the United States are pledged to pay about $12,000,000,000 to several million policy-holders during the next half century or so, and they are increasing this vast liability at the rate of $2,500,000,000 a year; and, in addition, there are more than eight hundred fraternal orders, business associations, and the like, insuring the lives of their members and guaranteeing to pay out another six billions. All these organizations collect, every year, some $500,000,000 from their policy-holders, besides another $100,000,000 of interest and the like. *In a word, their total income is a little larger than the income of all the railroads of this country, and their receipts for eighteen months would pay the United States national debt.*

A Substitute for Gutta-Percha.

In constructing a submarine cable the gutta-percha is employed to insulate the conducting wire from the exterior metal sheath; for long ocean lines it is considered essential. Artificial gutta-percha is a mixture of india rubber and a palm wax whose melting point is the same as that of the rubber. The electrical properties of the compound are equal to those of gutta-percha. The cost of an artificial gutta-percha cable is about thirty-five per cent. less than the ordinary one.

A Colossal Heavenly Body.

In the constellation Scorpio is a star of the first magnitude, called Antares. This, according to measurement of its parallax by Sir David Gill, is enormously distant, and must, therefore, be a colossal body. The astronomer, J. E. Gore, has computed from photometric considerations that its mass is probably 88,000 times that of the sun. Mr. Larkin, of the Lowe observatory, California, points out that round this great star is a wide region about as void of stars as any known, tho many starless fields are encountered in the heavens. He says, "The blackened and waste areas around Antares show no stars, or, if any, they are on the extreme limit of vision. In these dark expanses no trace of the delicate, pearl-white, shimmering background of the sidereal structure can be seen. The inference is that all the matter once in this area has been drawn in to build up the colossal star. The space has been swept clean." In the constellations Sagittarius and Scorpio there exist so many black fields without either star or nebulous background that one is forced to ask, Why is this?

Running a National Campaign.

Running a nationalca mpaign is serious business, says Joseph M. Rogers in the October *Booklovers' Magazine*. It is done as systematically as possible, with all the agencies that can be secured; yet much of the work is in the dark. It is easy to look back over a campaign, and, in the light of results, see what was done that ought not to have been done, what was left undone that ought to have been done; yet the man who can tell these things before the fact is very much wanted at campaign headquarters, state and national. The man who has prevision based on experience, or a sort of sixth

sense in politics, is the proper man for chairman of a national committee.

All the time that the fifteen millions voters are arguing, reading, going to mass-meetings to hear the spellbinders, and getting angry with each other, they know that as a matter of fact certain campaign committees, ranging from the precinct to the national ticket, are at work, just as they know someone runs a railroad, tho they do not know exactly who nor how. They are seldom conscious that any direct influence is being brought to bear on them. They feel that they are kings ruling by right divine, and would resent the charge that in any way they are being manipulated. But in New York city sit the national chairmen of the the two leading parties; each is surrounded by a small executive committee, and his principal agents are a national committeeman and the state chairman of his party in every commonwealth. Radiating from headquarters are lines of information and communication which pierce every election precinct in the country. In states where the ruling party has an overwhelming majority the minority party is apt to have a mere skeleton organization; but as a rule machinery is at hand for reaching every voter in the land, and most of them are reached many times, tho utterly unconscious of how it has been done. As a rule the advantage is with the party in power. It has the benefit of many place-holders working for success. It has whatever inheres in the mere fact that most people are conservative and do not care for a change. Nevertheless there have been few campaigns in the last forty years where the element of doubt was not strong until the very last moment.

Better.

There's only one motto you need
To succeed:
"Better."
The other man's winning? Then you
Must do
Better.

From the baking of bread
To the breaking a head,
From rhyming a ballad
To sliming a salad,
From mending of ditches
To spending of riches,
Follow the rule to the uttermost letter:
"Better!"

Of course you may say but a few
Can do
Better,
And *you're* going to strive
So that *all* may thrive
Better.

And it's right you are
To follow the star,
Set in the heavens, afar, afar;
But still with your eyes
On the skies
It is wise
To be riding a mule,
Or guiding a school,
Thatching a hovel,
Or hatching a novel,
Foretelling weather
Or selling shoe leather;
And remember you must
Be doing it just
A wee dust
Better.

—EDMUND VANCE COOKE.

In the October *Booklovers' Magazine.*

Letters.

A Professional Issue.

In reply to my inquiry in the issue of THE SCHOOL JOURNAL for September 24, I have received several letters. From one written by a gentleman in a position of great educational influence, I quote these remarks:—

I have read your letter in THE SCHOOL JOURNAL and am interested in it. It is worthy of note that all professional and intellectual progress in this world has come from a stimulus from above rather than from the rank and file of the democracy. Law schools, the judiciary, and the sharply defined grading of courts hold in awe the shyster lawyer. There is an aristocracy in the law which saves it from utter contempt. The same is true of medicine.

The labor unions are dominated from below. The influence of the labor union is to degrade the skilled workman and the ambitious workman to the level of the mediocre and indifferent. This is the result of the pure democracy of the labor union as led by the demagog. It will be a sorry day for teachers and put an end to the aspirations of the teaching profession when labor union methods are introduced into teachers' organizations.

Another educator writes that the proposition that teachers should fix their own fees is impossible. In fact, he seems to be opposed to the idea. This reminds me of a story I once heard. In his early days, Mr. X. presented himself as a candidate for the position of principal of a union school. The board of trustees liked him and at the regular meeting elected him promptly. When the clerk notified him, the appointee inquired,—"I suppose you fixed the salary at — dollars." ', Oh! No!" answered the clerk. "We agreed not to vote on the salary until you had done a month's work. You must make good first. You do the work: we'll fix the salary."

Only the man who furnishes a service knows at what he can afford to sell it. Lawyers fix their retainers and fees, physicians theirs, and in at least several Protestant denominations the ministers fix upon what salaries are properly payable by the various congregations.

With regard to the several other letters received, it is sufficient for me to suggest that by profession is meant an expert occupation, the very nature of which precludes the inexpert from passing upon its principles and methods. To say that a lay board of education "adopts a course of study" without the advice of professional educators is like saying that "grandma doses the children;" of course, sometimes the medical treatment administered by grandma makes "a lucky hit."

We raise the professional issue. The time may come when real teachers will look upon untrained teachers and the lay control of education exactly as doctors look upon quacks and quackery.

Bloomfield, N. J. WM. E. CHANCELLOR.

Coming Meetings.

Oct. 8—The regular monthly meeting of the Schoolmasters' club will be held at the Hotel St. Denis, on Saturday, October 8, at 6 p. m. The address will be delivered by President Woodrow Wilson, of Princeton university.

Oct. 19-21—New York State Council of School Superintendents, at Syracuse.

Oct. 20-21—Rhode Island Institute of Instruction, at Providence.

Oct. 20-22—Vermont State Teachers' Association, at Middlebury.

Nov. 12.—*Newark Library, Newark, N. J.*, music department of the New Jersey State Teachers'association, at 10 a. m. John Tagg, president.

Nov. 25—Massachusetts Teachers' Association, and Massachusetts Council of Education, at Boston.

Dec. 21-23—Southern California Teachers' Association, at Los Angeles.

Dec. 26-31—The California State Teachers' Associat San Jose.

Dec. 27-29—New Jersey State Teachers' Association, at Trenton.

Dec. 27-30.—Washington State Teachers' Association, at Spokane.

Notes of New Books

Elements of Algebra, by George W. Hull, M. A., Ph. D.—This book presents notation, fundamental processes, composition and factoring, fractions, simultaneous equations, involution and evolution, quadratic equations, and progressions. It is well printed and will be found a desirable work in the hands of beginners in algebra. (American Book Co., New York.)

Beowulf is an epic poem which tells of the exploits of a Viking hero of that name who delivers King Heothgar and his Danes from the ravages of a terrible monster, called Grendel, who feasted upon sleeping men. It was composed by our Anglo-Saxon ancesters while yet pagans and before they left the continent for England. It was composed about 600 A. D., learned and recited at feasts and other great occasions; it was put into writing about 1000 A. D. This tale reminds one of songs by the savages that once inhabited the land; of course the Anglo-Saxons were once savages. The edition before us is planned for schools, has an introductory sketch and notes. (Houghton, Mifflin & Co. Cloth, 25 cents; paper 15 cents.)

Hero Tales Told in School, by James Baldwin.—The tales which the author includes in this volume are a most precious heritage of the race. Among them are how Apollo came to Parnassus, in the wood of Calydon, Paris and Œnone, Iphigenia, Iduna and her apples, how Charlemagne crossed the Alps, what happened at Roncevaux, and other mythical and historical stories. The book is written in the author's happiest style and is well illustrated. (Charles Scribner's Sons, New York. Price, 50 cents.)

Atkinson, Mentzer & Graver, of Chicago, have begun their publishing career by the issue of two little books, "The Art Literature Primer," and "The Folk Lore Reader's Primer," which certainly have a most attractive appearance. The very covers seem adapted to children's uses. The "Art Literature Primer" consists of excellent illustrations of good paintings, some of them famous paintings, to which are appended little stories suitable for very young children. They should be of value in the "tiniest" grade as well as in the nursery.

Historical Tales, by Charles Morris.—This is the second series of historical tales, and is devoted to American subjects. A collection like this will be found of real value by the teacher, to furnish him with materials for talks on historical matters. In this way a taste for history will be formed. There are thirty-four "tales," as they may be called. Some of the names mentioned are Ponce de Leon, De Soto, Capt. John Smith, Patrick Henry, Eli Whitney, etc. As a book for libraries frequented by boys it would be also an excellent volume, or to be owned in a farm house would be much better than a ton of dime novels. (J. B. Lippincott Co.)

The Temple School Shakespeare is published by arrangement with J. W. Dent & Company, of London. It is designed primarily for class use, and bears no relation to the widely known "Temple Shakespeare." The volumes are neatly bound in cloth and contain many rare illustrations. The *Hamlet* is edited by Oliphant Smeaton, M. A., with six illustrations by Patton Wilson, and many others in the introduction and glossary from contemporary prints. (Henry Holt & Company, New York. Price, 50 cents.)

The thousands in this country who take an interest in golf will welcome the volume on *Golf for Women*, by Genevieve Hecker (Mrs. Charles T. Stout) with a chapter by Rhona K. Adair. The former is about the best known of the golf players in this country, and the latter is a famous British champion. A large part of the matter is technical, telling how to strike and how to make points in the game most effectively. This will of course be read carefully by the many who wish to make themselves more scientific players. Everyone should rejoice that the women of America are taking enthusiastically to field sports. The book has many page half-tone plates and other illustrations. (The Baker & Taylor Company, New York. Price, $2.00.)

Arithmetic: Book one. This has for its authors J. W. A. Young, Ph. D., and Lambert L. Jackson, A. M.; the former from the Chicago university, the latter from the Brockport (N. Y.) normal school. There are over 200 pages and each page contains questions that require some mathematical thinking. There are problems used in one series, and in an other merely questions. The ingenuity required to construct proper questions for children is necessarily great—that is questions, but the authors have proved themselves equal to the task. For instance: At the outset a picture is given of ten steps made all of cubical blocks. Concerning these there are forty questions; some are in addition, some in subtraction. All may be said to be easy, yet each demands thinking.

Then follow questions in comparison. "Are you taller or shorter than the door?" etc. The foot rule is ingeniously used; so are inch squares. From the beginning to the end the use of objects is maintained, so that problems that arise are real ones. Fractions are taught by means of paper circles; measures by means of sawdust. Addition, subtraction, multiplication, and division are first presented simply, then in life problems. "A book costs sixty-seven cents; what change will you get if you offer a dollar bill?" But this does not begin to show the skill employed in the making of this book. It is objective and progressive; it demands observation, comparison, and thought. It is devoid of hard problems; it keeps the pupil at work steadily so that he will by and by be able to master hard ones. Teachers will do well to examine the book just to see how two genuine pedagogs would teach arithmetic to children. (D. Appleton & Co., New York.)

Working with the Hands is the new volume by Booker T. Washington, his first being "Up from Slavery." In this he discusses in a very practical way the value of industrial training. He establishes two points (1) that mere honest training counts for little in man's developments, there must be what we term "education" to go along with it. (2) That the attempt to make an institution get work enough out of its students to pay for educating them cannot be realized. This has been dreamed about a great deal, and numerous experiments have been tried, but all have failed.

Mr. Washington is an exceedingly intelligent man, wonderfully practical. He begins by giving an incident in his own life in which the training to *precision* was productive of much moral and mental value. This same kind of training was enforced at Hampton where he was a student. Coming to Tuskegee he discovered that there were young men and women who could parse difficult sentences and yet were not struggling against the mean mode of life pursued in the cabins which made their homes.

The conclusion he drew shows him to be wiser than many white teachers; many of these were entirely satisfied if the pupil could parse well. This man saw the wrong idea concerning work possessed by the Tuskegee students must be got rid of; they had come there with the dream that with so much book-learning they would no longer need to work.

This wrong idea about work is firmly fixed in the minds of most of those who send their children to the public schools, and the private schools might be included. The young men come from the farms to the cities to get rid of farm work. Only at Tuskegee the black race had done nothing but work for 250 years, and it looked upon education as giving the means of rest. Mr. Washington understood the danger of making "hot house plants" of the students, far better than many a white teacher in our Northern schools; for the case is remembered of a principal of a city school who, to express his dissatisfaction with the results of his examination of his highest class (aiming to enter the high school) and also to spur them on to greater efforts, closed his address to them by saying, "If you cannot make an improvement during the next quarter you will have to work for a living."

Mr. Washington well states his conception of the negro problem to be to give the negro such education and training that he will be able to help himself and be indispensable to his community. He realized clearly there was added to the problem a feature that made it unlike the one confronting the principal of a large country academy and boarding school at the North—that the parents of the pupils were not land-owners. The pupil must be able to earn a living when he left the school. But it must be a power to earn a better living than before and that meant education.

There were therefore to be class room studies and training in agriculture, basketry, blacksmithing, bee-keeping, brick laying, brick making, carpentry, carriage trimming, cooking, dairying, architectural, free-hand and mechanical drawing, plain sewing, dress-making, electrical and steam engineering, foundrying, harness-making, housekeeping, horticulture, canning, laundering, machinery-making, etc., millinery, nurse's training, painting, saw-milling, shoe-making, printing, stockraising, tailoring, tinning, and wagon-making.

The negro when he came could raise cotton after a style he had learned from the poorest of teachers; when he left he was master of some trade and also able to read, write, and compute. If he remained long enough he would obtain quite an academic training, the teachers (twenty-eight in number) possessing degrees from the best Northern colleges, Columbia, Harvard, etc. Out of Tuskegee twelve similar institutions have sprung, opened by the graduates. Snow Hill institute begun in 1893, has property worth $30,000; the students number 400; it has graduated twenty-five, all of whom are required to pass the state teachers' examination.

This educative effort of Mr. Washington has brought forth excellent fruit because he knew the conditions surrounding the negro race and built to meet them; he did not follow tradition but practiced common sense. (Doubleday, Page & Co. Price, $1.50.)

Don't think that eruption of yours can't be cured. Take Hood's Sarsaparilla—its virtue is its power to cure.

The Educational Outlook.

Mr. James J. Hill, president of the Great Northern railroad, announces in an interview that fourteen colleges and schools of this country are owners of stock in the Northern Securities company, and that application to the courts will shortly be made for a distribution of the back dividends of that company which were tied up by the order of the Circuit Court of the United States when it was declared an illegal combination. Mr. Hill is solicitous lest these educational institutions be crippled.

The University of Chicago will receive one hundred and fifty thousand dollars under the will of the late Mrs. Elizabeth G. Kelly of Chicago.

Mr. Lyman C. Smith, president of the L. C. Smith & Brothers Typewriting Company, of Syracuse, has given one hundred thousand dollars to the Lyman Cornelius Smith College of Applied Science of Syracuse university. Mr. Smith founded the school four years ago with a gift of seven hundred and fifty thousand dollars. This recent donation will be employed to erect a building to be used for the mining, engineering, and mechanical laboratories.

Owing to the prompt work of a number of Harvard undergraduates, a fire on September 29, in Walter Hastings hall, the handsomest of the dormitories at Harvard owned by the university, was extinguished with little loss. About the time the fire was out the engines arrived. The Cambridge fire department never did believe in undignified haste.

The board of education of Wabash, Ind., has ordered every school boy to bring with him to school each morning a piece of cloth, a needle, and some thread. Every pupil in the public schools, boys as well as girls, must learn to do plain sewing. The excitement is said to be great in all the male departments. Many parents have protested against the order.

By the will of Mrs. Sarah Potter, of Boston, who died on September 23 at her summer home in Beverly, the kindergarten for the blind at Jamaica Plains receives one hundred thousand dollars, while fifty thousand dollars is bequeathed to Harvard university and the Massachusetts College of Pharmacy.

Mother Katherine, formerly Miss Katherine Drexel of Philadelphia, will, it is reported, erect several schools for the Winnebago Indians on their reservation in Nebraska, at a cost of a million dollars. The Winnebagoes had fallen into great degradation when Mother Katherine began work among them.

The steamship "Ivernia" which sailed from Boston on Sept. 27, carried among her passengers twenty-five young men from various states of the Union, who have won the Cecil Rhodes scholarships at Oxford.

One of the Massachusetts scholars, Mr. Paul Nixon of Braintree, had been instrumental in inducing the other twenty-four Cecil Rhodes men to sail together for England.

For the first time in their history the public schools of Syracuse show a decreased registration. The figures are 21,430 this year as against 21,609 in the fall of 1903. Hitherto each year has shown a steady increase.

The number of students at Yale will be greater this year than at any other time in the university's two hundred years of life. Three new buildings are to to be used for the first time this fall. They are Lampson hall, where will be located the administration office, the Kirtland laboratory, intended for research work in physiography, and Vanderbilt hall, the first dormitory open to members of the Sheffield scientific school. This hall is the gift of Mr. Frederick W. Vanderbilt, Yale '76, in memory of his brother, the late Cornelius Vanderbilt.

The Yale faculty has grown also and will this year exceed four hundred in number.

Rev. R. T. Campbell, principal of the academy at Pawnee City, Neb., has been elected president of Amity college, at College Springs, Neb.

Mr. G. A. Axline, superintendent of schools at Corning, Iowa, has been elected president of the Idaho normal college at Albion, Idaho.

At the recent session of the Iowa legislature a law was enacted prohibiting the distribution, posting, or painting of any advertisements of any intoxicating liquor or of tobacco, within four hundred feet of premises occupied for school purposes. The penalty was a fine of not over one hundred dollars or imprisonment in the county jail for not exceeding thirty days. An exception was made of the regular distribution of newspapers to subscribers and purchasers.

The school authorities of Des Moines have ordered, in obedience to the law, the removal of all the prohibited advertisements. The law will probably soon come before the Iowa courts for interpretation. In the case of certain advertisements devoid of lettering, difficult legal questions will arise.

Thomas Waggaman, of Washington, whose resignation from the office of treasurer of the Catholic University of America was required a few weeks ago by Cardinal Gibbons, was, on September 26, declared a backrupt by Chief Justice Clabaugh of the supreme court of the District of Columbia. Mr. Andrew Y. Bradley, son of the late Justice Bradley, was appointed receiver of all Waggaman's properties. The Catholic university holds a deed of trust for nine hundred thousand dollars of its funds, which were in Waggaman's custody.

Porto Rico reports that eleven hundred and seven schools, five of which are industrial, opened their class rooms this fall. The attendance is sixty thousand. More schools are being prepared, among them an agricultural school. Eight hundred, with an attendance of twenty-six thousand pupils, was the record of schools for the first year of the American occupation.

Judge Tillingast, of the supreme court of Rhode Island, has appointed a temporary receiver for the Nautical Preparatory school. This was the school which had leased the steamship *Pennsylvania*, and was to make a trip around the world with 250 boys on board as students. Lieutenant Commander C. H. Barlow, U. S. N., was to command the vessel, and the boys were to receive the instructions of a preparatory school as well as nautical training. The tuition fee was $1,200. Boys to the number of 160 were on board, eager for their trans-planetary school session, when the application for a receiver compelled them to think of returning to their homes. The illness of a prominent business friend of the undertaking, and the fact that 250 boys had not been enrolled, prevented the carrying out of the enterprise. The *Pennsylvania* is now in Narragansett bay.

Mrs. Helen L. Grenfel has been nominated by the Democratic party, in its state convention, for superintendent of the schools of Colorado. Mrs. Grenfel has already served in this position most acceptably, and it is the general hope that she may be returned to the state superintendency. Her reelection will certainly be to the best interest of the Colorado public schools.

Chicago school children are up-to-date. The McAllister public school on September 28 had thrown around it a cordon of boy pickets. The most mature picket had reached fifteen years. Outside this cordon, seven hundred boys and girls laughed at the teachers in the windows. The children were on strike, the cause being the presence of a new assistant kindergarten teacher, reported to be a negress.

A committee of the strikers learned that the new teacher was a pure Caucasian, but decidedly brunette. So the strike was declared off, and eighty per cent. of the children returned to school.

Recent Deaths.

Dr. Horace S. Tarbell died in San Francisco on September 16, after a long illness. Dr. Tarbell was one of the foremost school men of the last few decades. He was at one time state superintendent of Michigan, and saw service as head of the city schools of East Saginaw and of Indianapolis. For many years previous to his retirement he served as city superintendent of the schools of Providence. He wrote textbooks of importance in English and geography.

Dr. Tarbell was president of the Department of Superintendence of the N. E. A., and chairman of the trustees of the permanent fund. He retired from the Providence superintendency two years ago, hoping for a long period of scholarly leisure.

The Hon. George Frisbie Hoar, senior United States senator from the state of Massachusetts, died at his home in Worcester in the early morning of September 30.

Senator Hoar was born in Concord, Mass., on August 29, 1826, of distinguished Revolutionary ancestry on both sides, his maternal grandfather having been Roger Sherman of Connecticut. He was educated at the Concord academy and at Harvard, from which he was graduated in the class of '46. He received his professional training at the Harvard law school, and after being admitted to the bar, began practice in Worcester.

In a few years his practice was extensive and important, and at the age of twenty-five he was elected a member of the Massachusetts House of Representatives. In 1857 he was elected to the Massachusetts Senate. In 1869 he gained a great reputation by a speech delivered to that body in favor of technical education, said to have been the first adequate presentation of that subject in any legislative chamber.

In the same year, while in Europe, he was nominated for the Federal House of Representatives, and almost as soon as he took his seat there he became a prominent member. Mr. Hoar made a famous speech in behalf of William and Mary college, destroyed by the government's forces during the civil war, and by securing the sympathy of Congress for that venerable college, inaugurated the policy of the United States rebuilding educational institutions injured by military operations.

In 1877 Mr. Hoar was elected a United States senator, and he has been continuously re-elected ever since. In the year he was first elected to the Senate he was a member of the electoral commission which decided the disputed Hayes-Tilden presidential election.

Senator Hoar was a doctor of laws of Harvard and of Yale universities, of

Amhurst and of William and Mary college, a regent of the Smithsonian institution, and a member and president of many learned societies. For many years he was an overseer of Harvard, and in 1900 was elected president of the Harvard Alumni association.

Senator Hoar would have held a high rank among the ablest men who ever sat in the Senate of the United States. A profound jurist, of the most extensive reading in all branches of literature, his speeches, in their graceful style, brilliant with wit and apposite allusions, were the delight of the Senate. His character reflected dignity upon the Commonwealth he served. One of the founders of the republican party, he never hesitated to oppose that party's policies if they seemed to him unwise.

Frederick William Rhinelander, president of the New York Metropolitan Museum of Art, died suddenly at Stockbridge, Mass., on September 25, in the seventy-seventh year of his age. He was a member of the old Rhinelander family of New York, being a great-great-grandson of the Philip Jacob Rhinelander who settled at New Rochelle in 1696. Mr. Rhinelander was graduated from Columbia college in 1847, and became a trustee of the Metropolitan Museum of Art at its organization in 1871. In 1892 he was elected vice-president and in 1902 succeeded the late Henry G. Marquand in the presidency. The Rogers bequest of five million dollars had just given the museum a large income, and Mr. Rhinelander devoted his entire time to the wise enrichment of its walls and corridors. Thru him the museum was able to purchase the perfectly preserved frescoes of the famous room at Pompeii, the De Dino collection of armor, and the chariot, dating from 700 B. C., recently excavated near Rome.

David K. Goss, president of the American Institute at Strassburg, Germany, shot himself in that city on Sept. 27. He died instantly.

Mr. Goss left a letter saying he feared that he was becoming insane, and for that reason he had decided to commit suicide. Undoubtedly his mind had already become affected. He served as superintendent of the public schools of Indianapolis, Ind., from 1894 to 1900, and in that capacity served on the Indiana state board of education.

John Foster Kirk died on September 21 in Philadelphia. He was born in Fredericton, N. B., in 1824, and went to Boston when he was eighteen. In 1847 he became private secretary to William H. Prescott, retaining the office until Mr. Prescott's death in 1859. In 1870 Mr. Kirk became editor of *Lippincott's Magazine*. From 1886 to 1888 he was lecturer upon European history in the University of Pennsylvania.

James Callanan, a pioneer resident of Des Moines, Iowa, and one of the foremost citizens of Iowa, died at his home on September 26, aged eighty-two years. He had accumulated a large fortune, and was the founder of Callanan college, besides having been a generous contributor to many philanthopic institutions.

The Rev. Jacob Steinhauser, D. D., professor of Hebrew in Muhlenberg college, Allentown, Pa., and pastor of St. Michael's Lutheran church in that city, was stricken with paralysis while preaching a sermon on September 25, and died a few hours later. He was in his fifty-fifth year.

Dr. Steinhauser entered the Lutheran ministry in 1875, and was pastor of many churches in New York towns previous to 1889, when he became president of Wayne college at Rochester. He retained this office until he was called to Muhlenberg college in 1894.

PROFESSOR FISKE.

Daniel Willard Fiske, a member of the original faculty of Cornell university, died at Frankfort-on-the-Main, on September 17.

Professor Fiske was born in Ellisburg, Jefferson county, N. Y., in 1831, and was educated at Hamilton college. Without waiting to make his degree he went in 1849, to the University of Upsala, Sweden, where he supported himself by teaching English and lecturing on American literature. He was assistant librarian of the Astor library from 1852 to 1859, and in 1861-'62 was an attache of the American legation at Vienna under Minister John Lathrop Motley.

From 1864 to '66, Mr. Fiske was editor of the Syracuse *Daily Journal*, and in '67 and '68 he was editor of the Hartfort *Courant*. In 1868, Andrew D. White offered him the chair of North European Languages, at Cornell, and the librarianship of the university. He remained on the faculty until 1881.

In 1880 Professor Fiske married Miss Jennie McGraw, daughter of a wealthy lumberman, who had been a large benefactor of Cornell. Mrs. Fiske died in 1881, bequeathing her fortune of two million dollars to Cornell. The will was broken after a celebrated suit which was carried to the highest court. The court decided that the university had already acquired all the property it was permitted by its charter to hold, and that therefore the bequest to it was void. The fortune thereupon lapsed to Professor Fiske.

So much ill will was aroused thru this litigation that Professor Fiske resigned his academic offices and removed his residence to Florence, Italy. He continued to hold a friendly feeling toward Cornell, however, and now his fortune, estimated to be worth five million dollars, his Petrach collection of 5,000 volumes, and his Icelandic collection of 7,500 volumes, thought to be the largest of its kind in the world, are bequeathed by him to the university.

The Greater New York.

While it has been settled that there will be no change in the course of studies this year, there may be a slight rearrangement of the time schedule. The committee on course of study has before it the reports of the superintendents and principals, and is considering the advisability of attempting an improvement.

If any change is made, it will consist of an increase in the time alloted to English and mathematics, and the increased time will be gained by a reduction in the amount now consumed by drawing and construction work. Geography may gain a few minutes. There may also be a diminution of the unassigned time.

The board of education has directed its acting president to appoint a special committee to arrange for the proper celebration of the centennial of the New York public schools next February.

The board of education has adopted the report of the committee on elementary schools in regard to the petition of the Bushwick Avenue Reformed church Sunday school, asking to have anniversary day in Brooklyn made a school holiday. The committee were compelled to deny the request, as the by-laws do not include that day among the holidays.

Dr. Michael E. Sadler, the well known English educator, visited the High School of Commerce during his stay in New York, and was shown over the classrooms by Principal Sheppard. Dr. Sadler addressed the pupils in the auditorium. He complimented the principal and the boys upon the excellent effects shown by the school, particularly on the method of organization.

The vacancy caused by the resignation of Miss Frances C. Hayes, director of kindergartens for the borough of Queens and Richmond, will not be filled. Dr. Jenny Merrill will add Richmond to her present task of supervising the kindergartens of Manhattan and the Bronx, and Miss Fanniebelle Curtin will have charge of the work in Queens as well as in Brooklyn. This is in line with the expressed intention of the board of superintedents to reduce supervision in the schools, where such reduction is practical.

The Building Trades Alliance announced on September 28 that it had obtained enough employees, and that there would be no further delay in the work on the public schools.

Dr. Darlington, health commissioner of New York, addressed the County Medical society at the Academy of Medicine on September 26. His address was on the work of the health department in the schools. He traced this work from its commencement with 150 inspectors in 1896. Dr. Darlington showed that there had been a large increase in the number of children excluded from the public schools, the figures last year standing 41,826 as against 7,086 excluded in 1897.

At the next meeting of the board of estimate Comptroller Grout will ask for $750,000 to provide new playgrounds in the thickly settled parts of Manhattan and Brooklyn.

The comptroller has long desired to do this, but only recently did he discover that an amendment to the small parks act made it possible to raise the money. If the board of estimate approves, the money will be raised by the sale of municipal bonds.

Passing by Proxy.

The hundred or more candidates for the certificate of the Board of Regents, who were taking the examination at the Grand Central Palace on Sept. 27, were thrown into considerable consternation by the arrest of two of their number. Two young men were charged with impersonating others in order to obtain for some incompetent person the regent's certificate.

Charles F. Wheelock, chief examiner of the state department of education, was in charge of the investigation which led to the arrests. Mr. Wheelock asserts that the passing of the regents' examinations by proxies is conducted on a large scale, and he promises further arrests.

There is no doubt that other guilty ones shook in their shoes when the accused young men were led from the examination hall. THE SCHOOL JOURNAL has frequently had brought to its knowledge that any person desirous of obtaining the regents' certificate could easily hire a substitute possessed of a fluent knowledge of everything, from spelling to the higher flights of mathematics and English literature.

Mr. Wheelock's energy is to be much commended. The department of education however, should devise such safeguards that the personal identity of the person examined would be proved beyond doubt. Such an arrangement is not superhumanly difficult to contrive.

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We extract the following from the Medical Reprints: The value of antikamnia tablets consists in their rapid effect in alleviating pain. Two five-grain tablets almost instantly relieve headaches or neuralgia. A dozen five-grain tablets should at all times be near at hand. Twenty-five cents will get a dozen from your druggist.

The Columbia Anniversary.

The one hundred and fifty-first year of Columbia university began on the afternoon of Sept. 28, with ceremonies of unique interest. The exercises took place in the gymnasium, in the presence of several thousand students and a great gathering of citizens. The faculty of all the schools, in hoods of many colors, walked in a double column from the administration building to the choir seats back of the stage. The long procession was closed by the Bishop of New York, the Archbishop of Canterbury, and Pres. Nicholas Murray Butler. The archbishop was gowned in the mantle of a doctor of laws of the University of Cambridge. Bishop Potter wore no academic insignia. Being in his own diocese, he was robed in the purple and scarlet of a prince of the church.

After the opening devotions had been conducted by the chaplain of the university, President Butler spoke a few words, referring to the little city at the foot of Watling street, thru which Roman, Saxon, Dane, and Norman had marched, and which for thirteen centuries had been of such importance to all Christians who spoke the English tongue. From the stately minster of that ancient church capital its ninety-fourth archbishop had come across the sea, and had condescended to be their guest. It was peculiarly appropriate that they were able to entertain His Grace, because one of his illustrious predecessors had been the head of the first board of governors of King's college, and the university in its infancy had received many benefits from the English church and the English realm. Dr. Butler then introduced Dr. Robert Simpson Woodward, dean of the School of Pure Science, who delivered the address of the day, "Academic Ideals." Professor Woodward's address was really a partisan oration in favor of the present range of teaching as against the old scholastic course, but it had the always saving merit of real wit. The most intense defender of the ancient curriculum could not help but smile when Dr. Woodward denied that "a part of archeology was the whole of education," and told his hearers, with mock astonishment, that it had been found possible for the same college building to house in peace a professor of poetry and a professor of physics.

After the singing of the beautiful university hymn, Bishop Potter rose, and as head of the diocese of New York, in the name of the trustees of the university, presented the primate of the mother church for the honors of the university. No incident in the history of this seat of learning has been more memorable or interesting than this, said the bishop. "The Archbishop of Canterbury is here, Sir, to see with his own eyes the work which his distinguished ancestors began and encouraged."

Dr. Davidson then stepped forward, and President Butler, sonorously calling the long bead roll of the guest's many ecclesiastical and academic titles, announced that upon "The Right Honorable and most Reverend Randall Thomas, Lord Archbishop of Canterbury, Primate of all England, and Metropolitan, successor of St. Augustine, of Anselm, of Becket, and of Cranmer, scholar, author, orator, theologian, statesman, and great Christian prelate," Columbia university conferred the degree of doctor of laws, and amid the loud cheers of the undergraduates the doctoral velvet and miniver was hung about His Grace's shoulders.

The primate immediately won the hearts of his auditors by referring in

25 CTS PISO'S CURE FOR CURES WHERE ALL ELSE FAILS. Best Cough Syrup. Tastes Good. Use in time. Sold by druggists. CONSUMPTION 25 CTS

Teachers' Agencies.

ONE DISADVANTAGE of a recommendation agency occasionally manifests itself. On Sept. 2, 1904 Sup't Hartwell of Kalamazoo, Mich., telegraphed us from St. Albans, Vt., that he would like to meet a seventh grade teacher in our office the next day. When he got here he found the teacher waiting. After talking with her a while he came to the desk and said, "I thought you would have more than one candidate."—"We didn't think it necessary; isn't she good enough?"—"O I shall take her, but I find there is another vacancy and I thought a second candidate might do for that." He was on his way home and it was impossible to get a second candidate to him on the way. **OF A** still only a single candidate. He wrote Sept. 8: "I met Miss——at Detroit yesterday. But he offered to meet her at Detroit and we sent her on, and have secured her for the year at $500. As she preferred not to go back she is now here and ready for work. I thank you much for your help in the emergency." Of course another agency might have set candidates upon him at St. Albans, and boarded the train with them at Schenectady and Utica, and had a dozen or more here; but he seems to prefer a **RECOMMENDATION AGENCY**

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warm terms to the great future of "*our* university." Although just made an alumnus of Columbia, and therefore, for the present, its youngest member, he was also, in a way, its oldest. In his library at Lambeth, were two large volumes containing the letters of eighteenth century archbishops concerning this foundation. But, despite their interests, his predecessors had not obeyed the charter regulations which ordered all the governors to attend the trustee meeting once each month. After one hundred and fifty years, he had come to repair in part the long omission.

His Grace then referred to the problem which confronts education on both sides of the Atlantic, and said he was not prepared to say that the advantage of results was on either side. There were some things which age alone could give, and yet America, coming in with a great rush, had been able to solve problems which the elder nation had not been able to master in many hundred years. We were standing at the commencement of a century destined to be the brightest in history. Famous scientists predicted for the near future discoveries greater than those yet wrung by mankind from the unknown depths of nature. He must be indeed dull of pulse and apathetic of brain who, remembering these things, could stand unmoved before an assemblage such as was presented to him. "For if new doors of knowledge are to be opened, many of the men and women who are to open them are here before me to-day."

When Archbishop Davidson had finished, the procession was re-formed and marched across the campus to the site of the new chapel. On the edge of the excavation the Primate dedicated the proposed building to the spiritual uses of the university and the worship of God. The services of the day then closed with the pronouncement by the archbishop upon Columbia and upon all those connected with her, of his apostolic benediction.

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Literary Iems.

Lippincott's for October contains a very interesting article, well illustrated, on the "Old English Sacred Drama," by Prof. Felix E. Schelling, of the University of Pennsylvania. Those who have not studied the history of our theatrical literature are generally ignorant that the the drama began its course under the shelter of Mother Church. The first dramatic representation took place in the choirs of the cathedrals during Holy week. The poor theater has since wandered far from the sanctuary, altho it is only the Puritans who regarded the stage as such an abomination that they ordered the actors to be whipped at the cart's tail. There were fortunately no actresses in those days, for the Puritans would have given them an equal taste of the rod. Prof. Schelling tells about this entertainingly, and yet with the accuracy of the scholar.

We are delighted to find our old friend, Mr. E. S. Martin, with an article in *Leslie's Monthly Magazine* for September. Mr. Martin charmed many thousands of readers every week when he contributed a page to *Harper's Weekly* under the caption "This Busy World." There is no pen in the magazine world more graceful than Mr. Martin's, and his ideas on things are generally sane and just. It was remarkable how, in "This Busy World," he seemed nearly always to give just the right touch. His article in *Leslie's* is peculiarly pleasing because it treats of a delightful problem we have always with us, "The Naughtiness of Children." Like all Mr. Martin's work, it must be read in his own words to receive adequate appreciation.

It is said that the new story by the author of "Mrs. Wiggs of the Cabbage Patch," which is to begin in the December *Century*, is the story of a little Scotch boy who ships from Glasgow as a stowaway and brings up in Kentucky.

The German Emperor as a Baby.

The following pen-picture of Emperor William of Germany is one of the most interesting and unusual bits of the new biography of that monarch, *Imperator et Rex*, by the author of *The Martyrdom of an Empress:*

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nand-William-Victor-Albert was not one of those coarse, red-faced, squealing, infants who frown themselves sourly into this vale of tears, but a delicate, pretty baby, with an exquisite texture of skin, smooth and rosily pale, with tiny blue veins faintly showing at the wee temples, and unusually alert and wide-open sapphire-hued eyes already showing a grave under-glow as if the very beginning of life was for him an especially perilous undertaking, to be met with extreme energy.

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A Social Happening.

Little Alphonso, Jr., had been carefully tucked into bed, had asked for his last drink of water, and was about to dream material for new questions when his mother heard, as she was carefully and quietly folding the little garments in the dim light, "Mother, how was it I first met you?"—October *Lippincott's.*

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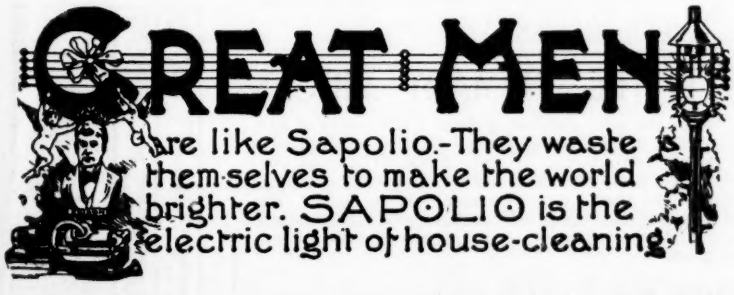

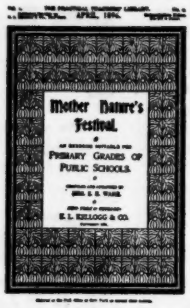

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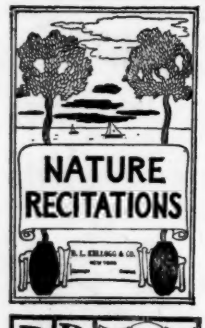

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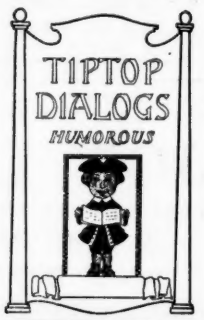

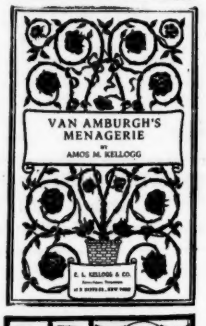

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